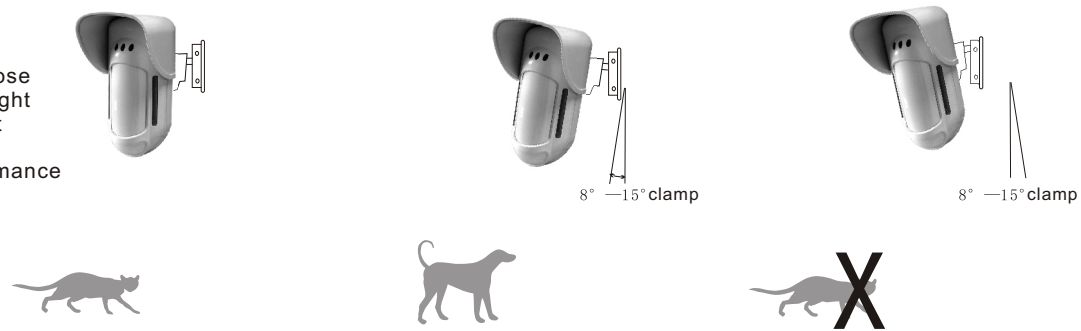


3.12 Setting of detection angle

when detector use all-purpose bracket(accessory), take right picture as a example,adjust angle of installation to get detection range and performance which you want.



in this angle, detector has middle sensitivity, pet-immunity is 10kg

in this angle, detector has the biggest area angle, lower location is not sensitivity, pet-immunity is 20kg

in this angle, detector has the smallest area angle, and has high sensitivity, pet-immunity is unable.

3.13 Perform motion test to the detection area

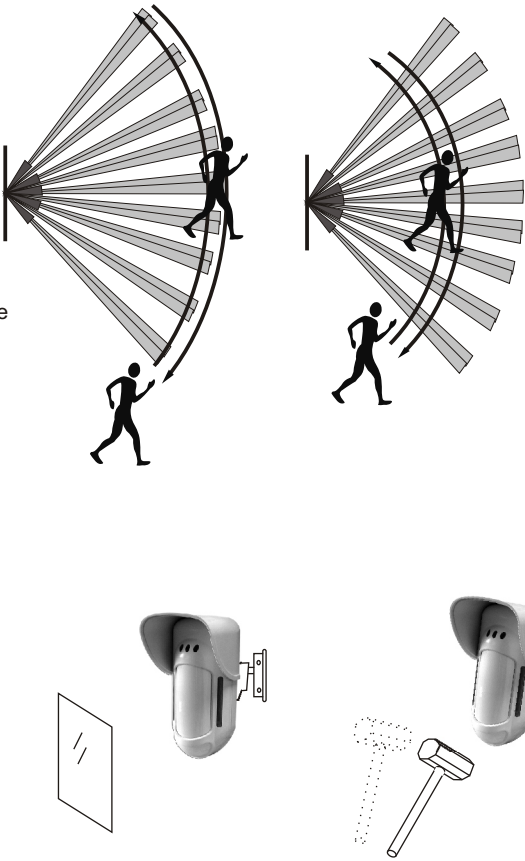
- 1.Start the test at least 3 minutes after power supply
- 2.Crossing to any direction of the detection area, your walking with 0.75m/s will cause the Yellow&Green LED indicator to light for 2-3s (refer to the right diagram)
- 3.Perform motion test from contrary directions in order to confirm the boundary of two sides. Make confirmed that detection center pointing to the center of protected area
- 4.Away from the detector 3 to 6m, raise slowly your arm and reach into the detection zone, mark the lower limit of PIR detection. Do the same step to confirm the upper limit
- 5.The center of detection zone should not uphill incline. To obtain a good detection range, please adjust the vertical detection range, ensure the detector is in a correct position
- 6.After MW sensitivity or detection angle are adjusted, walking test must be performed according to the above steps

Masking detection test procedure(Anti-masking DIP7 ON)

in front of the detector with distance of 5cm, place a piece of white paper (or other objects); 15s later, yellow light is flashing, AM output is on.

Motion detection test procedure(DIP8 ON)

shaking detection, if detector is fixed on the wall, knock it by screwdriver. AM port will open for 2~3s



important suggestion: in order to keep perfect work capability of detector, suggest user to give detector a walking test per month.

4. Special comments

Detector will false alarm if something happen as follow: direct current is unreliable, line connection error, cover lens balefully, optical system has been damaged, the temperature of surrounding towards to human's, detector will lose sensitivity and some parts lose function. but these problem not difficult to solved, we suggest user to test detector per month, please do not see alarm system as insurance. possessor and leaseholder should treat your wealth carefully, although you have installed alarm system. According to specification of FCC, the 15th capture, our detector accord with regulation of grade B digital device, these regulation is proper protection for disturb uptown balefully. our device produce wireless frequency and energy, if using do not according to specification, will affect wireless and TV work normally. if interference is made (to confirm by open and turn off), user can do as these methods:

- increase the distance between device and receiver.
- connect device to a interface of receiver which is different from the one which connect with power supply.
- contact with wireless/TV technology engineer with experience



WARNING! Changes or modify to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment

Installation Guide of FT-89 PIR&MW Intelligent Intrusion Detector

1.Introduction

FT-89 series PIR&MW complex intrusion detector is the ideal motion detector for industrial, commercial, residence and so on, can be able to work in the most difficult environment conditions and where high security is required while maintaining unprecedented immunity to false alarms, also can be work outdoor because good water-proof, FT-89 will inform user automatically if it be damaged or can not work normally. FT-89 series adopt precise Fresnel lens technology produce 3D protected area with high energy receiving rate and high sensitivity but no false alarm; combining four sources anti-mask microwave head, can calculate motion's volume, speed etc. so with high sensitivity distant range from 4m to 12m. FT-89 also adopt IIR tube leading technology to make MW area and PIR area superposed. except special detect technology, FT-89 possesses protection device to avoid tampering or damaging. in it's working state, possesses functions as below:

- 1.active anti-shelter: using IR scanning, in order to avoid object closing to detection area.
- 2.when choose OR mode, if PIR detector lose work ability caused by any problem (such as detector head be masked), MW part will detect problem and send out alarm signal to control panel.
- 3.anti--damage: if someone moving and damaging detector, the shaking sensor can send out alarm signal to control panel.



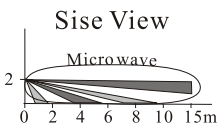
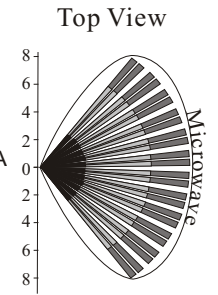
Product appearance

2.Specifications

Models:
FT-89(wired)

Detection Range: 15m/25°C
Input Voltage: 9 to 16VDC
current consumption: direct current about 65mA (Lens Date)

optical lens date (RL300)
IR area: (11+11+9)*2-62 (classic)
max covering area: (50*50 foot)/90
start indication: three color light take turn to flashing last for 60S



alarm, anti-tamper and anti-shield
alarm output: fixed replay, NO and NC, more than 100mA/30V, --10 interior obstruct

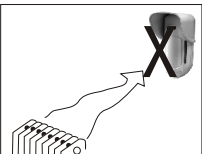
anti-tamper interface: NC, 50mA/30VDC
anti-shield output: fixed replay, NC, more than 100mA/30V, --10Ω

circuit open for 2~3S when alarming.
alarm indication: red LED flashing for 2~3s
installation:
surface or corner of the wall, height: 2.0~2.4 m (recommend height 2.2m)
notice: bottom seat allows corner installation, and the angle can be 45 degree.
accessories:
bracket 1: surface installation bracket, adjusted for up-90 degree, down-30 degree, right or left-45 degree.
work environment:
work temperature: -10°C~50°C (-14°F~122°F)
preserve temperature: -20°C~60°C (-4°F~140°F)
anti-white light: higher than 15000LUX

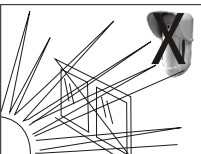
This device according to Europe legislature items of 1999/5/EC and requirements and spirit of wireless and telecommunication terminal device in Mar, 9th, 1999; also content demand of RSS-210 standard of Canada.

3.Installation

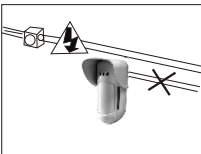
3.1 General Guidelines



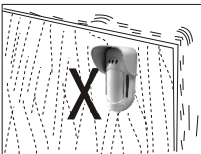
do not confront cool or hot source



do not confront anywhere sunlight point-blank.



the lines of detector should apart from high voltage line.

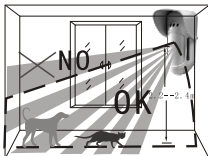


do not installed in unstable place.

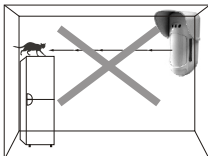


do not installed confront metal wall.

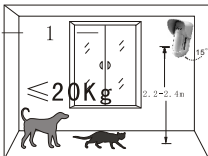
3.2 Anti-pet installation



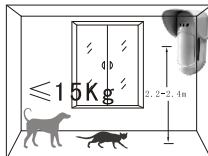
the top of detected area is not pet-immunity area



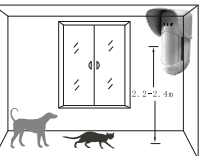
do not install detector confront the place where pet can get easily.



the pet which can be prevented should less than 20kg



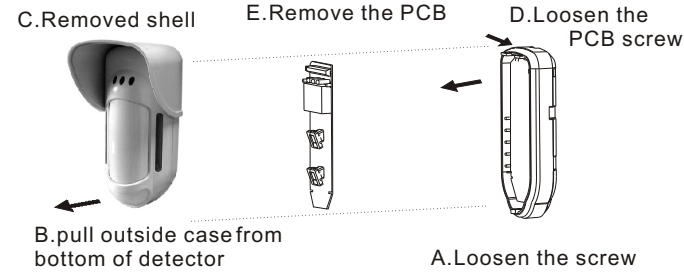
the pet which can be prevented should less than 15kg



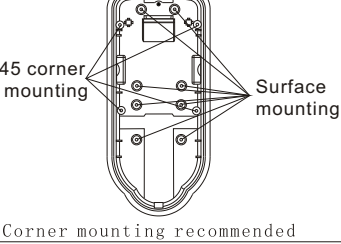
the safe installation height is from 2.2m to 2.4m.

3.3 Installation Procedure

1.Disassemble unit

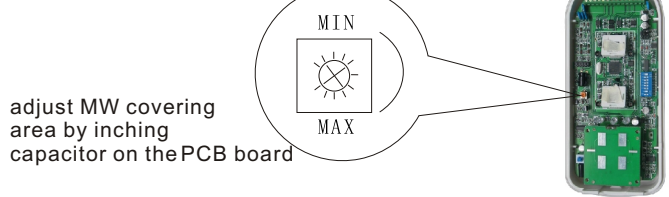


2.Mount base
Recommend installation heigh
1.8-2.4m



- A. mark the point need to be drilled.
- B. lead line into bottom from back slot
- C. insert two nails and two screw to fix bottom in the wall.
- D. go back PCB board and screw.

3.5 MW sensitivity adjust

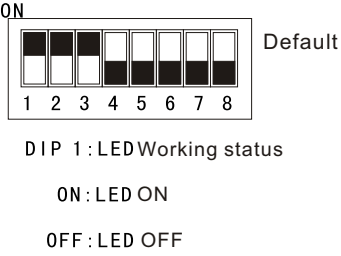


3.6LED STATUS SPECIFICATION

| LED | STATUS | DESCRIPTION |
|---------|---------------------------|--|
| Yellow | bright long time | indicate IR detect |
| | flashing | indicate AM(anti-masking)detect |
| Green | bright long time | indicate MW detect |
| Red | bright long time | indicate alarming |
| | flashing | indicate communication with BUS has trouble(only BUS output model) |
| All LED | (successionally) flashing | initialization |

- 1. DIP switch should be in state "ON", start LED indication.
- 2.there is just one LED work anytime, for example:in one condition that both of PIR and MW are able to detect intrusion , yellow LED is bright or green LED is bright, then red LED will indicate alarming.

3.7DIP Switch set

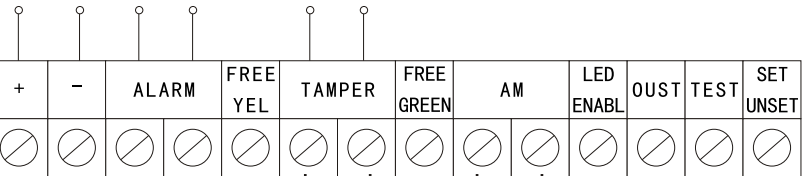


DIP 2-3:Detection sensitivity

| Sensitivity | DIP2 | DIP3 |
|--------------|------|------|
| Low | OFF | OFF |
| Middle | OFF | ON |
| Normal | ON | OFF |
| MAX(Default) | ON | ON |

- DIP 4: alarming qualification
ON:PPIR or MW
OFF:PIR +MW
DIP 5:detector's optical capability
ON:fence/long distance
OFF:wide-angle
DIP-6: red LED/three colors LED
ON:only red LED
OFF:three color LED
- DIP 7:anti-masking running
ON:start
OFF: stop
DIP 8: prohibit swinging detector (if install swinging detector)
ON:start
OFF:stop

3.8Terminal wiring sepecification



| | | |
|------------|------------------------|--|
| +- | Power supply | 12VDC |
| ALARM | Alarm | N. C Relay , 24VDC , 0. 1 A |
| FREE YEL | Free interface, yellow | Free interface, can connect circuit and EOL resistor. |
| TAMPER | Tamper switch | N. C Relay , 24VDC , 0. 1 A |
| AM | Anti-masking | N.C AM RELAY output(24VDC,0.1A), Indicating anti masking or any fault of inside Notes: When DIP 8 is ON,when swinging, this relay will be open -circuit instantly. |
| FREE GREEN | Free interface , green | Free interface, can connect circuit and EOL resistor. |
| LED ENABLE | ON | When DIP is on, used for LED remote control ON: input+12V or not connect OFF, connect input to OV |
| OUST | DUST | NO.collector, MAX.70mA, indicating Lens is dirty and need cleaning. |
| | Test | Supply OV voltage thru this interface, used for remote alarm test. Success: alarm relay open circuit instantly Failure: AM relay open circuit |

| | |
|------------|--|
| ARM/DISARM | Enable the anti masking and make the LED status match the system status and arm/disarm. When systems is armed, this function can prevent intruder getting to knowthe detector status and disable anti-masking detection. |
|------------|--|

| | | | |
|---------------|---------------------|----------|-------|
| SYS status | Input status | AM relay | LED |
| SET(ARM) | 0V | OFF | OFF |
| UNSET(DISARM) | 12V or unconnection | ON * | ON ** |

- * DIP7 ON Anti masking ON
- ** DIP1 ON(LED ON) 和LED ENABLE Input terminal ON(+12V and unconnection)

3.9 Change lens

chang process

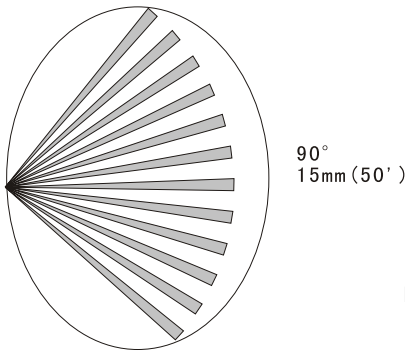
- 1.open cover usingscrewdriver.
- 2.aftering discharge 6fixed screws backof frontal cover.
- 3.pull out fixed frame of lens,take down lens

- 4.change lens, input4 fixed fastenersin frame, matching the hole.
- 5.put lens frameback to cover, and fixed lens frame using screw.
- 6.install FT-89out side over, and fix screw of cover.

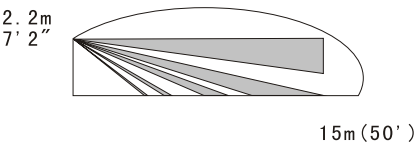


3.10 Model of Lens

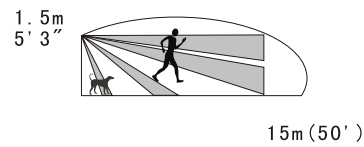
Wide-angle lens
Wow location installation--
Pet anti-immunity lens(RL300F)
Vertical View



Wide-angle lens
Side View

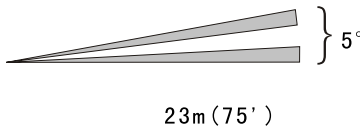


low position installed
pet-immunity Lens(RL300F):
Side View

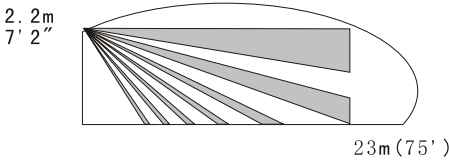


Notice:Pets exempted;height of animal shorter than 70cm(2'4") no weight limited

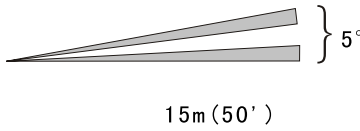
Long distance lens(RL300LR):Vertical view



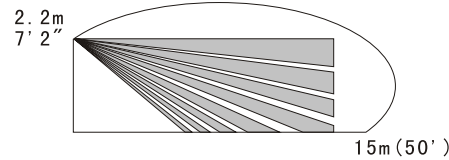
Long distance lens(RL300RL):Side elevation



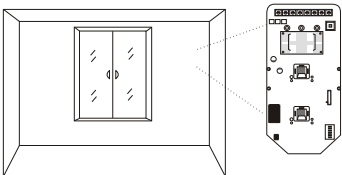
Fenlceens(RL300B) Vertical view



Fenlceens(RL300B) Side view



3.11 Setting of PCB



Please adjust interiorPCB location to solve your problemwhen detector be installed in different environmentand location. forexample: if you want long distance detection, you should put PCB in higherposition; if wantshort distance detection,please put PCB in lowerpositon.