# Dual-Tech Detector with Pet Immunity

Introduction

The new generation dual-tech PIR detector is based with an ASIC technology MCU processor and 10.525GHZ Doppler detect module, which can distinguish the real motion of an intruder or the interference of the enviornmental factors. The adopted new algorithm have the PIR detector immunized to the strong EMI/RFI and light interference.The equipped thermal element and the temperature compensation technology greatly increase the applicability of different temperature environment.

Specifications

Detection Mode: Dual-element PIR+Microwave Module(X-BAND 10.525GHZ)
Power Input: 9VDC~14VDC

Top View:

Power Consumption: 10mA in standby mode
                    30mA in alarm mode
Alarm Output: NC
                    up to 30VDC, 100mA

Alarm Period: 2 Sec
Pulse Count: 1 or 2 Selectable
LED indicator: LED is ON/OFF Selectable
                    Blue=PIR Channel, Red=Alarm Mod
                    Yellow=Warm up& MW Channel, Blinking Red=Anti-Mask
Tamper Output: NC, 30VDC, 1A
                    Open when cover is removed
RFI Protection: 30V/m 10 - 1000MHz

Side View:

EMI Protection: 50000V Electronic Interference
White Light Immunity: Up to 8000 LUX
Temperature Compensation: Yes
PIR Sensitivity Adjustable and Pulse Selection: Yes
Microwave Sensitivity Adjustabel: Yes
Detection Area: 90 degree X 12M   at 25°C
Operating Temperature: -10°C to 50°C

Coverage Pattern

Operating Humidity: ≦95%
Dimensions: L 125X W 60X H 38MM
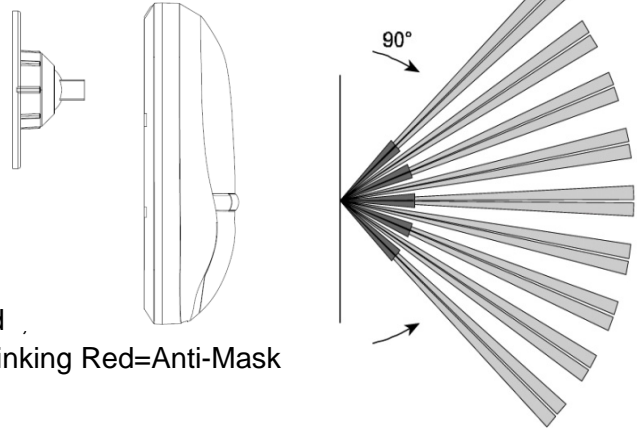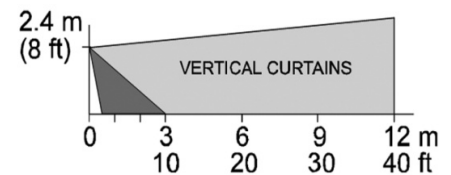
Installation

1. The detector is designed to be applicable of wall mount, corner mount or ceiling mount with bracket. The installation height is around 2.2-2.4m. For better performance, the detector should avoid the location close to the following sources of interference: reflective surfaces, direct air flow form vents, fans, windows, sources of steam, oil vapor, infrared light sources and objects causing temperature changes such as heaters, refrigerators and ovens.

2.The detector should be straight after installation, and the detection area is better across the len, not facing the len.

Step 1: Remove the front cover with a flat screwdriver, and then unscrew the screw on PCB to remove the pcb. You will find there are several knock-outs on the bottom for different installation purpose.

step 2: Drill or break out the knock-outs you need, and connect the wires, or fix the bracket you need. Then mount the base to the wall, corner or ceiling with bracket.

Step 3: Fix the PCB again and close the cover. (please set the detector before step 3, refer to the setting program).

Step 4: Test the detectors.(refer to the walk test program)

Detector Wiring

Please follow the following instructions for wiring and functions setting.

Terminal 1: marked GND

Connect it to the negative power supply or GND of alarm panel

Terminal 2: marked +12V

Connect it to the positive power supply (9VDC~16VDC)

Terminal 3&4: marked ALARM

This is the alarm output from detector, connect it to a Normally Closed zone of alarm panel. Sometime and EOL resistor is required.

Terminal 5 & 6: marked TAMPER

Usually connect it to the 24-hour zone. If the front cover is opened, an open signal will be sent to the alarm panel immediately. Sometime an EOL resistor is required.

Terminal Diagram

Function Setting

The digital detector is designed with different function settings.
Please check the PCB diagram and set the functions as follows:

Switch 1: LED   ON/OFF of the LEDs

Position ON to enable the LEDs	Position OFF to disable the LEDs

Note: LED ON/OFF does not affect the detection performance.

Switch 2: PIR Pulse Setting

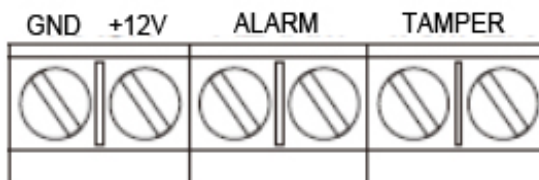| Position ON, 2 Pulse,	Position OFF, 1 Pulse, higher sensitivity

Switch 3: PET immunity Setting

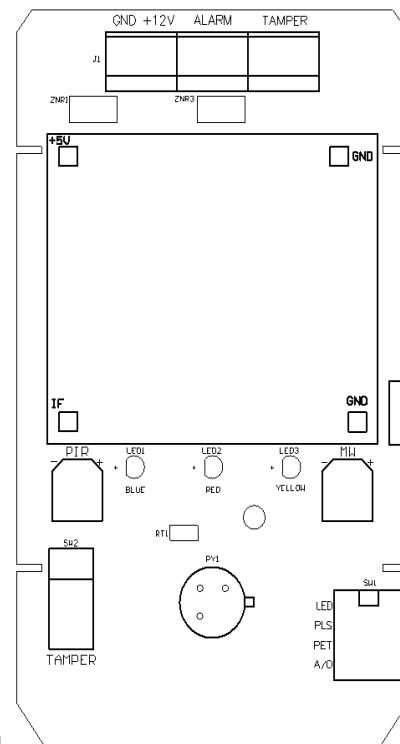| Position ON, immune to 15Kg	Position OFF, immune to 25Kg

Switch 4: A/O setting   A/O =AND/OR

Position ON, OR setting means the relay will be triggered either PIR or Microwave is present
Position OFF, AND setting means the relay will be triggered both the PIR and Microwave are present

PCB diagram

Sensitivity Adjustment

Both the PIR and Microwave sensitivity can be adjusted separately to suit the different detection zones.

The PIR pertentiometer is to adjust the PIR detection distance.

The MW pertentiometer is to adjust the Microwave detection distance.

Note: Walk test is necessary after the sensitivity adjustment.

Walk Test

It is important to test the coverage area after installation. And it is recommended to test the detector once half year to ensure the detector is in proper status. After the detector is powered for about 60 seconds for warm up time, please follow the steps

Step 1: remove the front cover.Set LED in ON position, remount the detector.
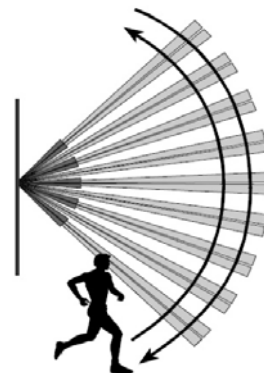
Step 2: Adjust the detector angle to keep the len across the detection area.

Step 3: Walk across from the far end of the coverage pattern in both sides.

The LED should be on for 2~3 seconds each time when the motion is detected.
The interval between each motion is not less than 5 seconds.

Step 4: After finishing the test, you can set the LED off, and close the front cover.

The detector design is according to EN50131-2-2:2008 grade 3 standard

coverage pattern

CE approved.

version 1.0