

# ART. DT12EAM

## Dual-Tech Sensor Antimask function



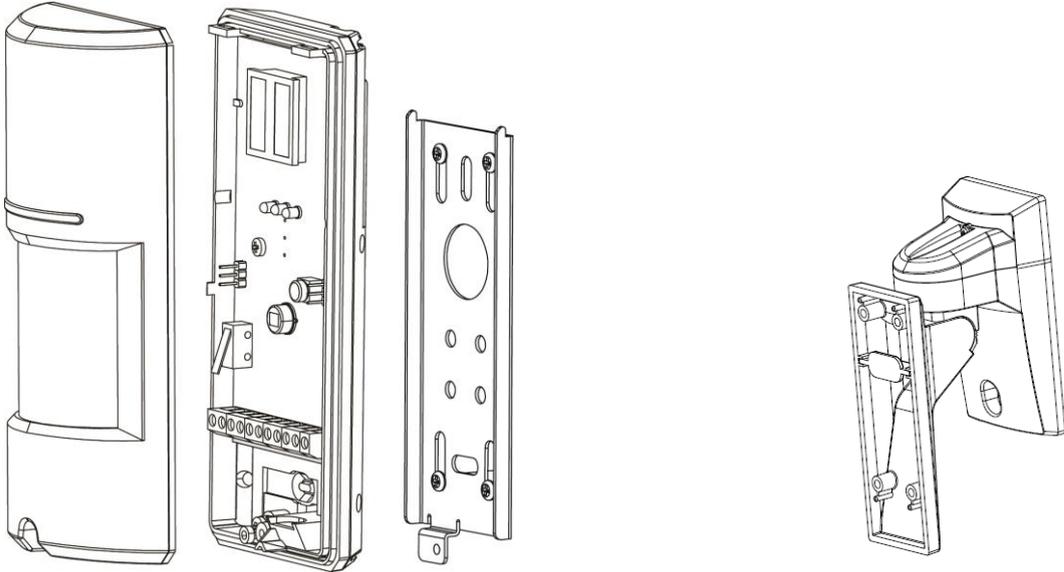
### USER MANUAL

## **Features**

- Microwave detection based on Doppler concept.
- N.O relays switched at the same time.
- Installation height is calibration free from 1.8m to 2.4m (5.9 to 7.8 ft)
- PIR sensitivity adjustment.
- MW intensity selection.
- Temperature compensation.
- Microcontroller signal processing.
- Anti mask mechanism (for PIR lens).
- Front and back tamper protection.
- Unique waterproof and sealed plastic design.
- Detection Range: 12m
- Detects human intruders walking or running.
- No maintenance required.
- High RFI/EMI Immunity.
- Protection from: direct sunlight, wind up to 30 m/sec, snow and rain, small animals, removal of top cover and removal from mounting bracket.

# 1 Assembly description

The DT12EAM is a robust yet small detector which includes a large LED indicator that can be easily observed from long distances to provide indication of intrusion. Using the supplied mounting bracket, the DT12EAM can be easily mounted to walls using the provided mounting screws. For installations requiring the detection beam to be adjusted horizontally or vertically to obtain the desired field of protection use the Outdoor Mounting Bracket pictured below. (not included)

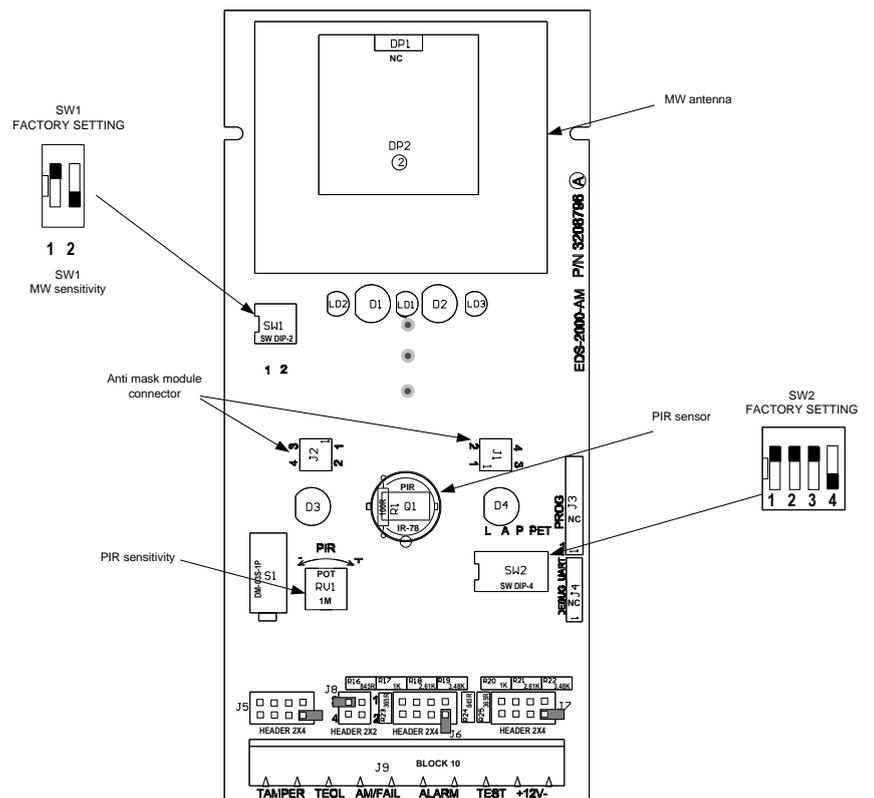


DT12EAM Outdoor Motion Detector

Outdoor Mounting Bracket

The DT12EAM consists of two detection elements:

- PIR element
- Microwave element

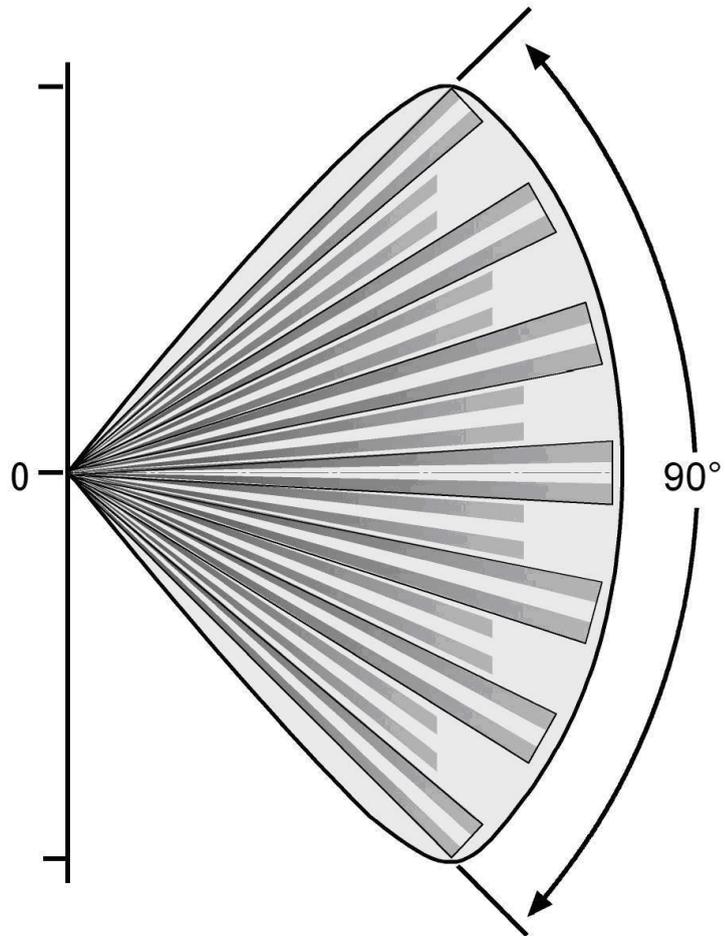


## 2 Detection Pattern

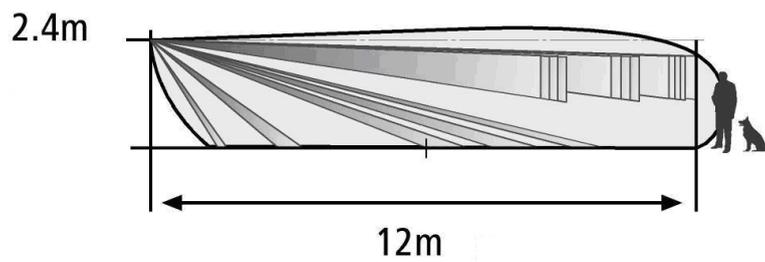
The DT12EAM has a 90° top view PIR and MW detection pattern with 12m detection distance (when installed at 2.4m above the ground surface).

DT12EAM

TOP VIEW



SIDE VIEW



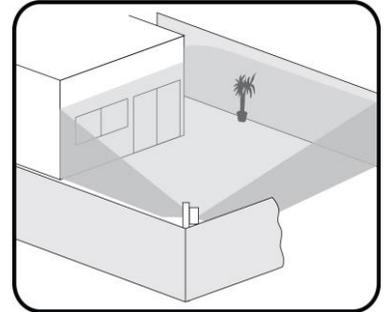
### 3 **Selecting mounting location**

The installation of the DT12EAM requires straight and solid base for the detector and setting of front panel against the center of protected area.

The protected area must be free from obstacles like walls, fences, trees, ditches and other microwave detectors, as well as systems of anti-intrusion surveillance.

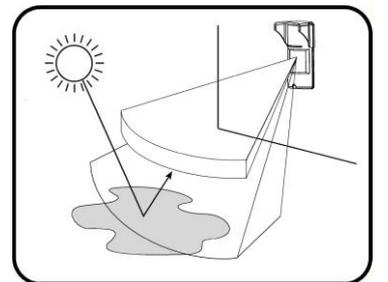
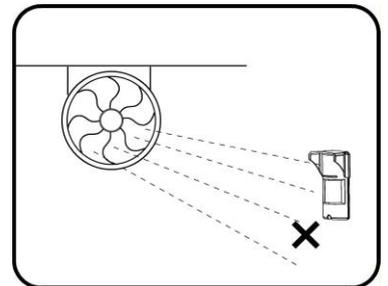
The bracket provides DT12EAM installation on a wall. The wall should be leveled.

Choose a location most likely to intercept an intruder according to detection pattern on page 5.



Avoid the following Installation Locations:

- Facing direct sunlight.
- Facing areas subject to rapid temperature changes.
- Mounted at more than 10° from the vertical or horizontal plane.
- Facing metal doors.
- Near direct sources of heat or airflow.
- Clear all physical obstacles from the detection area (e.g. plants, laundry, etc.)
- Clear all light reflecting surfaces from the detection area, including puddles or other standing water.
- Avoid installation on the following types of ground:  
Thick vegetation, Grass (un-mown), Water, Sand and Metal.



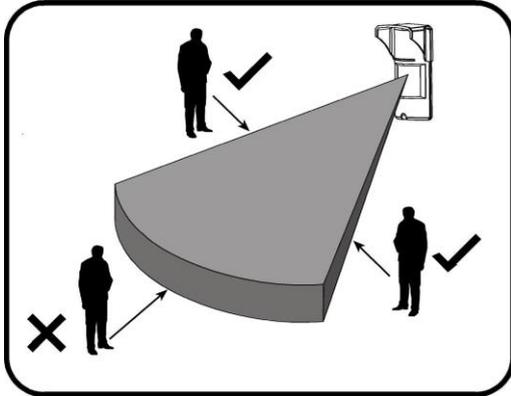
#### NOTES:

- Recommended installation height is 2.1m (6.8 ft).
- The PIR sensor detects motion crossing the beam; it is less sensitive detecting motion towards the detector.
- The DT12EAM performs best when provided with a constant and stable environment.
- In order to ensure suitable operation of the DT12EAM, the type of ground should be one of the following: Asphalt concrete, Cement, Soil, Clay, Gravel or Grass (mown).

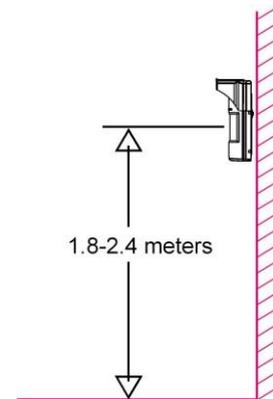
## 4 Detector Installation

***Important! Prior to installation, read both "Operation" and "Selecting the mounting location" sections carefully.***

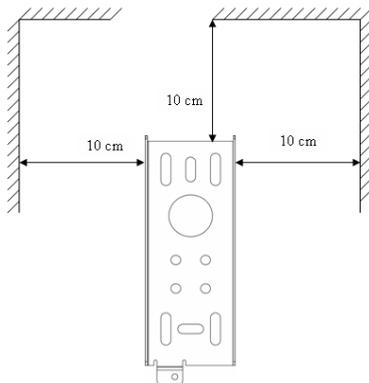
1. Install the detector in such manner that the intruder is most likely to cross the detection area from side to side.



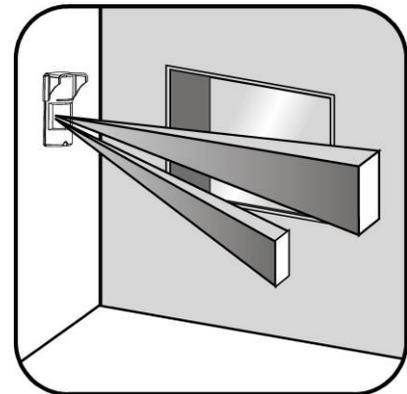
2. The detector is to be installed at height of 1.8 to 2.4 meters (5.9 to 7.8 ft), ideally 2.1m (6.8 ft)



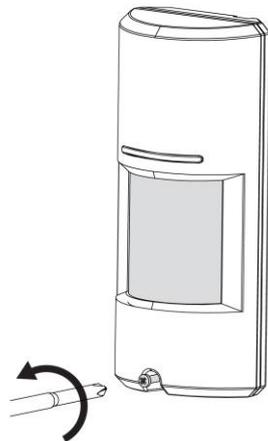
3. Make sure to attach the metal bracket to a leveled straight and firm wall, leaving 10cm (3.9 inches) from the top and 10cm (3.9 inches) from both sides, for easy installation and maintenance.



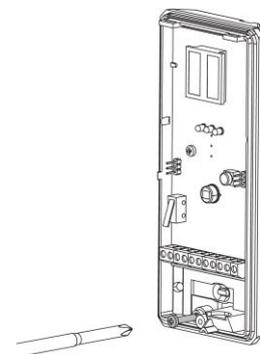
4. Placing the detector on perpendicular wall is required for guarding a side window opening. Alternately the LC-B1-15X Outdoor Mounting bracket can be installed on the same wall, allowing the detector beam to be rotated towards the window.



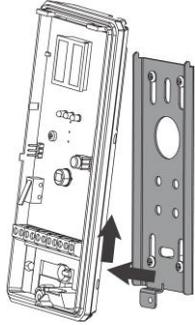
5. Open the detector unwinding the bottom screw.



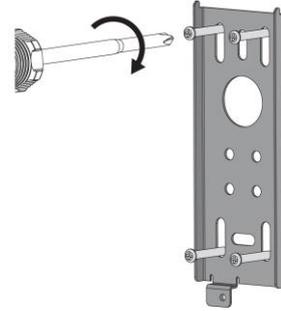
6. Release the rear metal bracket by unwinding internal bottom screw.



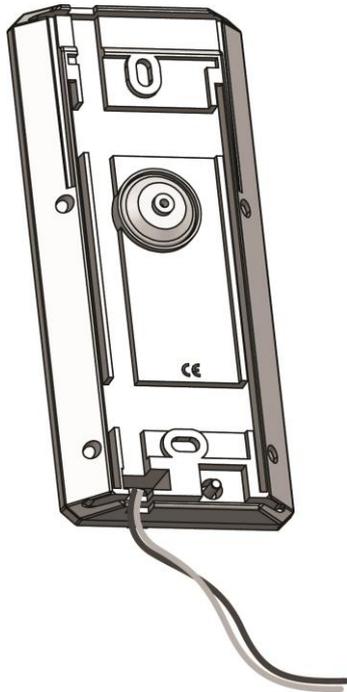
7. Release the detector body from the metal bracket by pulling the detector up and out.



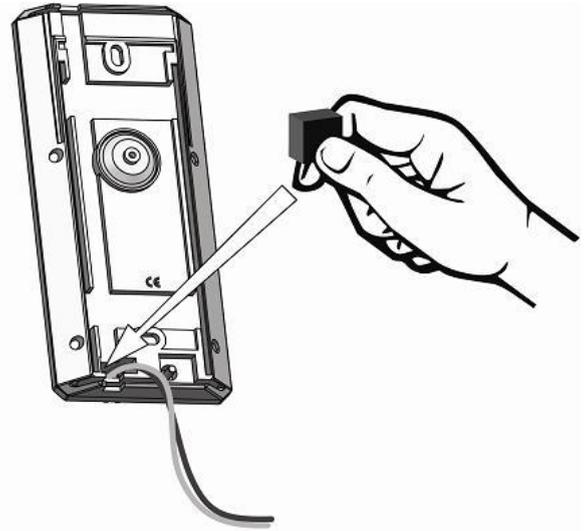
8. Attach the rear bracket to the wall using mounting screws.



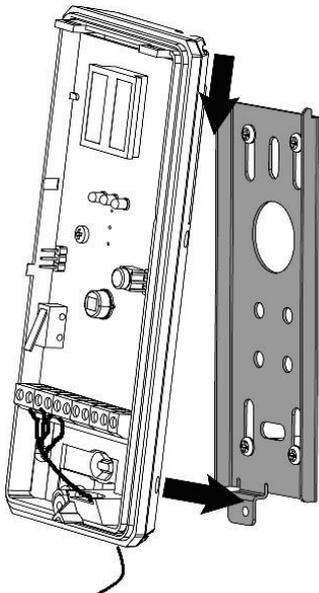
9. Insert wires through provided access hole and wiring channels.



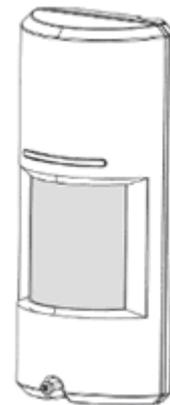
10. Attach the sealing sponge pad to the wire opening from the rear side after the wires have been connected and prior to final product affixing to the mounted bracket.



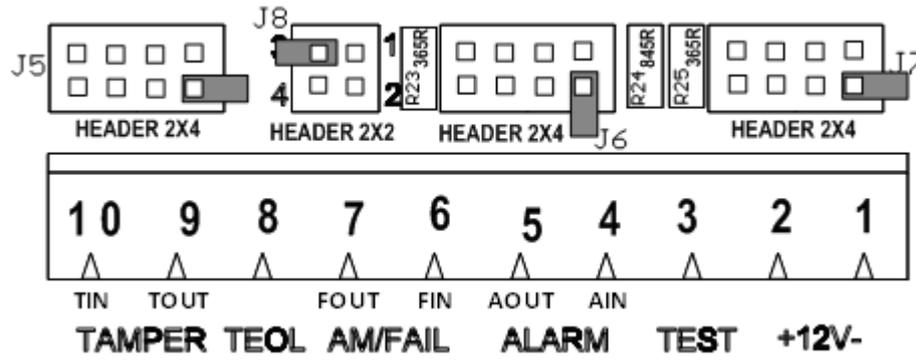
11. Place the detector on the mounting bracket from top side down and then lock the screw at the bottom.



12.



## 5 Terminal Block Connections



JUMPER	POSIZIONE	VALORE RESISTENZA
J5 (EOL TAMPER)	1	1,8 k $\Omega$
J5 (EOL TAMPER)	2	DIDN'T USE
J5 (EOL TAMPER)	3	DIDN'T USE
J5 (EOL TAMPER)	4	DIDN'T USE
J7 (ALARM)	1	1,8 k $\Omega$
J7 (ALARM)	2	3,3 k $\Omega$
J7 (ALARM)	3	DIDN'T USE
J7 (ALARM)	4	DIDN'T USE
J6 (AM/TROUBLE)	1	DIDN'T USE
J6 (AM/TROUBLE)	2	3,3 k $\Omega$
J6 (AM/TROUBLE)	3	DIDN'T USE
J6 (AM/TROUBLE)	4	DIDN'T USE
J8 (2/4)		Connessione interna tra FOUT e TIN
J8 (2/4)		Connessione interna tra AOUT e FIN
J8 (2/4)		Connessione interna tra AOUT e TIN
J8 (2/4)		Connessione interna tra AOUT/FIN e FOUT/TIN
J8 (2/4)		Non usare

Terminal 1 - Marked "+" (+12V) - Connect to a positive Voltage of 9.6 -16Vdc source (Usually from the alarm CP)

Terminal 2 - Marked "-" (GND) - Connect to the ground of the CP.

Terminal 3 –Marked "Test" 9.6-16 v on this pin will enter the DT12EAM to walk test mode even if SW2 position 1 is off

Terminals 4 & 5 - Marked "ALARM" - These are the output relay contacts of the detector. Connect to a normally closed or normally opened zone in the control unit. When an intruder is detected, alarm relays (N.C. and N.O.) will switch for 1.8 sec.

Terminal 6&7 - Marked "AM/FAIL" These are the output of the anti mask and Trouble relay (N.C. and N.O.) Will switch if one from the following scenario happens:

The supply voltage is under 8.5v

Mask detection (will restore if the mask is removed)

PIR or MW self test fail (every 10 hours the detector made self test for PIR and MW sensors)

Terminal 8 - Marked "TEOL" - End of line – optional terminal for end of line resistors connections.

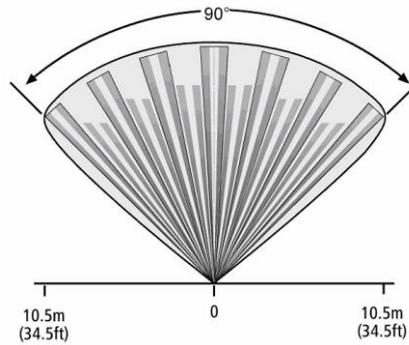
Terminals 10 & 9 - Marked "TAMPER" - If a Tamper function is required connect these terminals to a 24-hour normally closed protective zone in the CP.

If the top cover of the detector is opened or the detector is detached from installation wall, an immediate alarm signal will be sent to the CP.

## 6 Settings & Adjustments

### 6.1 Detection beam direction

The DT12EAM detection beam direction is fixed. As a result, it is recommended to face the intrusion area with the detector.

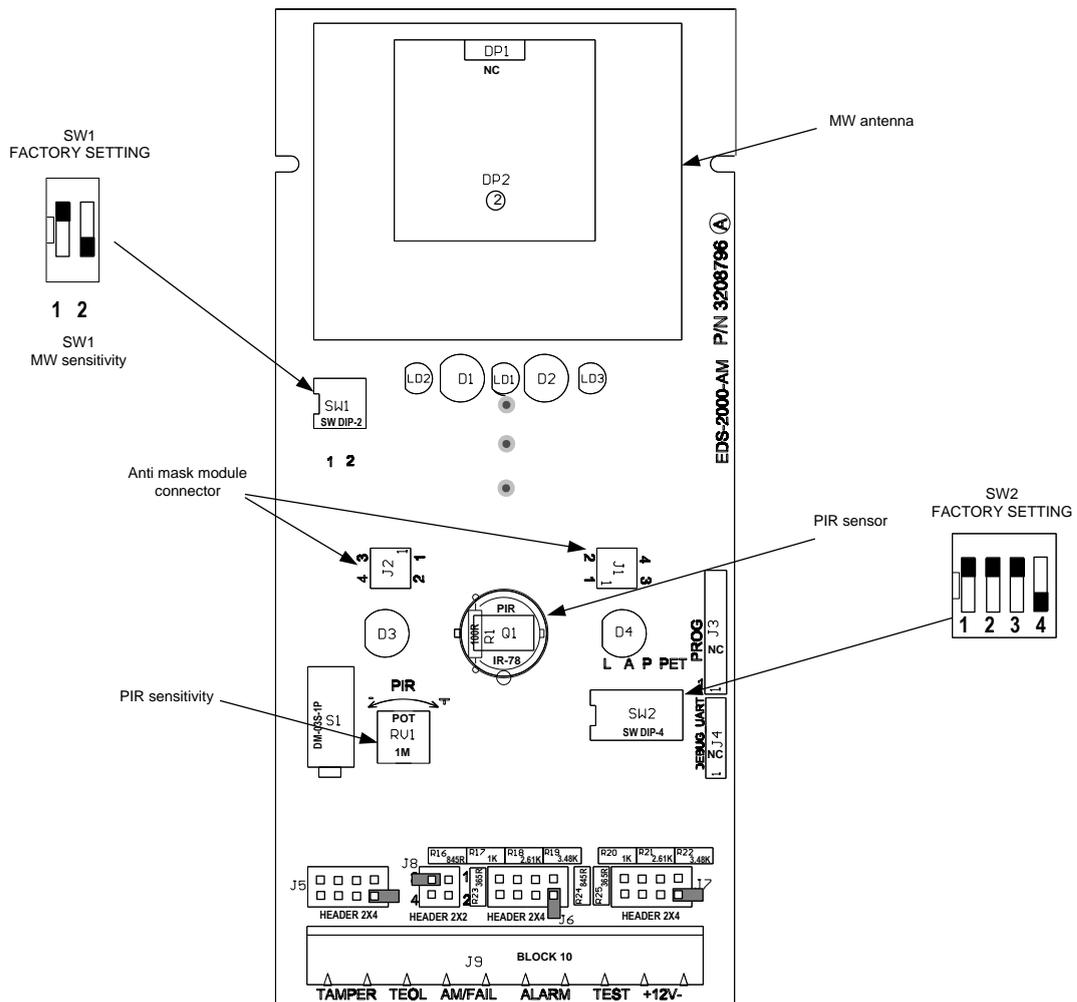


### 6.2 Sensitivity and Range Adjustment

There are 2 options for PIR sensitivity option:

PIR potentiometer adjust

SW position 3 – PIR pulse setting when up- 2 pulses down -3 pulses



### General configuration setting table (for sw2)

Feature	Sw position	On (up)	Off (down)
Indication LEDs	1	Indication LEDs on	Indication LEDs off
Anti Mask	2	ON	Off
PIR pulse count	3	2 pulses	3 pulses
Pet immunity	4	On	Off

### 8.2.2 MW Sensitivity adjustment

The MW has 4 configurable levels by SW1:

Position 1	Position 2	
up*	up*	High sensitivity more suitable for indoor application*
up	down	High sensitivity for outdoor application
down	up	Medium sensitivity for outdoor application
down	down	Low sensitivity for outdoor application

\*Note: This setting can affect the detection sensitivity of the infrared

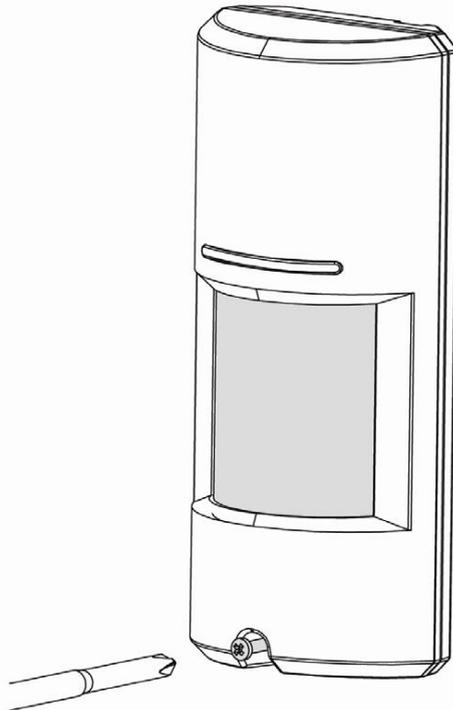
### 8.3 Indications setting

The DT12EAM has 3 LEDs that each points at different indication:

1. Green LED indicates PIR detection.
2. Yellow LED indicates MW detection.
3. Red LED - alarm indication (logic AND of both MW and PIR)

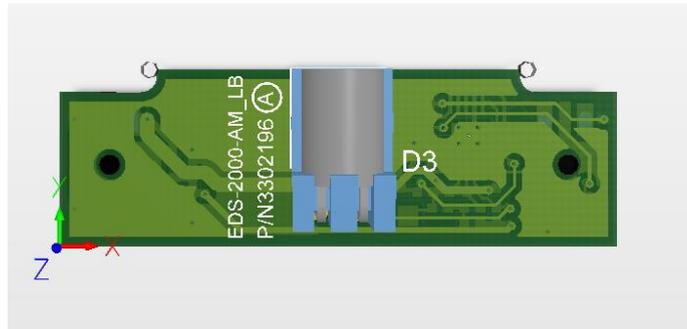
The installer has an option to control LEDs operation, using the LED control on SW2 position 1, between "ON" and "OFF". Or by apply 9.6-16v to terminal block position 3 ("test")

- Place the top cover to the base and close it using the bottom screw.



## 9. Anti mask

The DT12EAM has a sophisticate anti mask module:



This module is assembled on the DT12EAM main board.

To activate the AM please pull up SW2 position 2 .

The DT12EAM has a ambient light sensor.

The DT12EAM made self calibration for the anti mask 30 minutes after power up.

Please be verify during installation that the DT12EAM is closed well before 30 minutes from power up.

If the first power up is under direct sunlight the DT12EAM will made the self calibration 30 minutes after the sun light intensity will decrease

## 10 Operation

**Note! Connect the DT12EAM to a positive Voltage output of 9.6 -16VDC**

Use only a listed power limited source.

The detector shall be provided with minimum of 4 hours of standby power from either a listed compatible control unit or power supply.

The detector is automatically operated once connected to power.

The LEDs start flashing one at a time (side to side) for 30 seconds during the warm-up period and after that it will turn off.

At this time the detector is ready for operation.

## 11 Test procedures

### Walk Test

Make sure LEDs control is set to "ON"

Allow 30 seconds of warm up time.

Make sure that the protected area is cleared of all people.

Start walking across the detection zone.

Look at the LEDs whenever motion is detected - all LEDs are turned ON.

Allow 5 sec. between each test for the detector to stabilize.

Upon installation, the unit should be thoroughly tested to verify proper operation.

Walk across the entire area where coverage is desired. Should the coverage be incomplete, readjust sensitivity or relocate the detector.

Once coverage is as desired the LEDs may be disabled.

***NOTE:*** *Walk Test procedure should be conducted, at least once a year, to confirm proper operation and coverage of the detector.*

## 12 Specifications

<b>Detection Method</b>	PIR AND MW
<b>Microwave Frequency</b>	10.525GHz
<b>Power Input</b>	9.6 to 16Vdc
<b>Current Draw</b>	Active: 24mA ( $\pm 5\%$ ) Standby: 21mA ( $\pm 5\%$ )
<b>Temp Compensation</b>	Dual slop temperature compensation
<b>Alarm Period</b>	2 sec ( $\pm 0.5$ sec)
<b>Alarm Outputs</b>	Form C (NC, NO, Common) 28Vdc 0.1 A with 10 Ohm
<b>Tamper Switch(s)</b>	Two Switches N.C 28Vdc 0.1 A with 10 Ohm Series protection resistors Opens when cover is removed from unit's base
<b>Warm up Period</b>	30sec ( $\pm 5$ sec)
<b>RF Immunity</b>	10 V/m plus 80% AM from 80 MHz to 2GHz
<b>Electrostatic Immunity</b>	6kV contact, 8kV air
<b>Transient Immunity</b>	1kV
<b>Operation Temp</b>	-35°C ~ +55°C
<b>Dimensions</b>	160 mm x 70 mm x 45 mm
<b>Weight</b>	210gr.
<b>European directives</b>	RTTE , EMC, Low Voltage, RoHS
<b>USA &amp; Canada</b>	47CFR part 15, subpart C, section 15.245, 47CFR part 15, subpart B RSS210, ICES-003
<b>Protection Degree</b>	IEC 60529: IP 64

\* Specifications are subject to change without prior notice