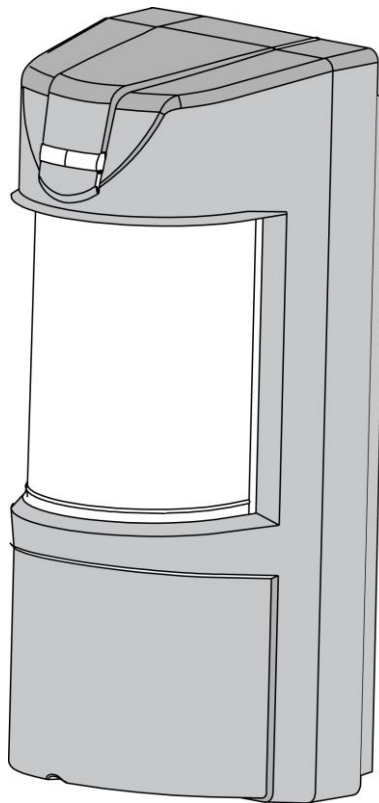


# **FW2-EDS 3000AM**

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Two Way Wireless Outdoor  
Double Quad Detectors with Antimasking



**INSTALLATION INSTRUCTIONS  
&  
USER MANUAL**

## TABLE OF CONTENT

1	Introduction .....	2
2	Features.....	3
3	Operation .....	3
4	Assembly Description.....	4
5	Detection Pattern .....	6
5.1	<i>Range Adjustment</i> .....	6
5.2	<i>Pet Immunity</i> .....	7
6	Learning & Installation.....	8
6.1	<i>Select Mounting Location</i> .....	8
6.2	<i>Learning Procedure</i> .....	9
6.3	<i>Detector Installation</i> .....	10
7	Settings & Adjustments .....	11
7.1	Detection beam direction .....	11
7.2	Detection range setting .....	11
7.3	Dip Switches Functions.....	12
8	Test procedure .....	14
9	<i>Specifications</i> .....	15
	Crow Limited Warranty.....	16

## 1 Introduction

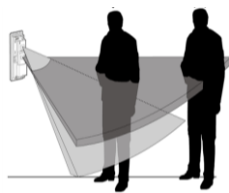
The FW2-EDS3000AM is a unique two-way wireless outdoor double quad motion detector with active Anti-Mask feature. The advanced Double PIR Elements provide two detection areas for superior stability.

The FW2-EDS3000AM is designed for outdoor usage in most severe and extreme acclimate conditions that may also accommodate pets.

High reliability is achieved by combining both Dual Quad Sensors with highly sophisticated software as well as an adaptive coverage area, reducing false alarms alerts to zero while maintaining high security standards for the detection of human intruders into protected area.

The detection sensitivity and range is controlled by optical rotary switch allowing 25 calibration levels, so that the effective pattern will be set for every installation environment and protection site.

The FW2-EDS3000AM is designed to protect large areas and can easily be installed on walls in order to provide a solid protection of the area while rejects interferences from birds and small animals due to “PET MASK” optics.



Double PIR  
Elements



Pet Immunity



Anti-Masking



2 Way Wireless



Remotely  
Configurable

## 2 Features

- GFSK 2 Way Wireless Protocol
- Frequency Band: 868.35MHz / 916MHz.
- Powered by 4 batteries Type AA (Battery life: Up to 5 years).
- Tamper Open/Close transmission.
- Supervision transmission.
- Battery status transmission.
- LED indications
- Range up to 500m on open space.
- Remotely configurable.
- Height installation calibrations free: from 0.8m to 1.5m
- Pet Immunity up to 35kg.
- PIR sensitivity adjustment.
- Temperature compensation.
- Front and Back tamper protection.
- Sound indication for walk test and intruder detection.
- Unique waterproof and seal plastic design.
- Detection Range: Up to 12m
- Protection from: direct sunlight, wind up to 30m/sec, snow and rain, small animals...
- Anti-Masking feature enabled by Dip Switches or Remotely (*from Serenity™ control panel*)

## 3 Operation

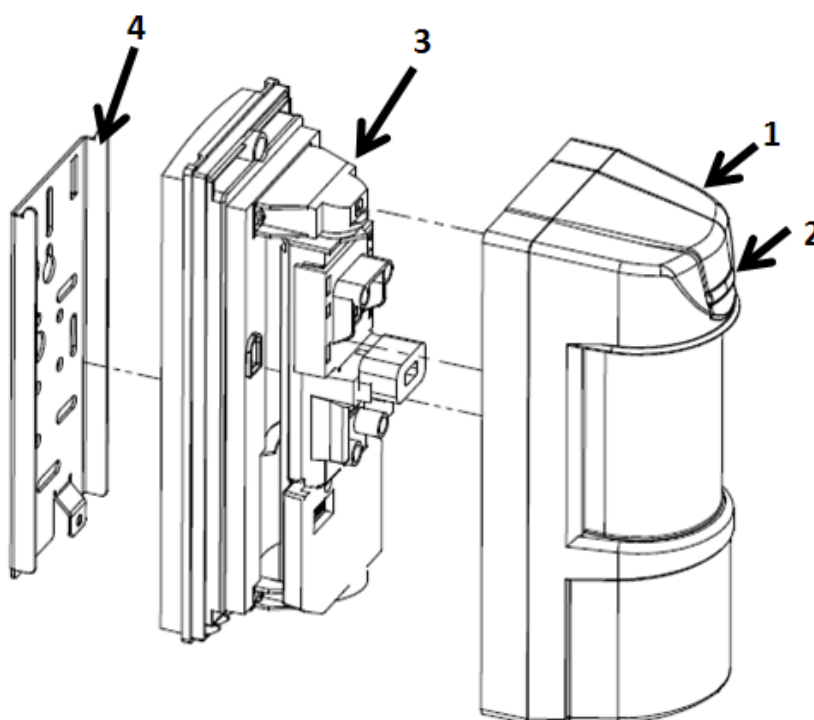
This FW2 EDS3000AM detector transmits the following events data:

- **SUPERVISION**– A periodical transmission (configurable) indicating detector's presence.
- **ALARM** – Alarm transmission triggered by the device indicating Motion detection.  
The Red LED will blink once.
- **LOW BAT** – Whenever the battery reaches the low level (2.5V), a Battery Low signal will be sent.  
When Battery level drops below Cut Off level (2.3V) the device will stop functioning and the Red LED will blink for 10 seconds and then turned Off.
- **TAMPER** – Whenever the cover is removed from Bracket or the device is tear off from the wall, a message will be transmitted with "Tamper ON" signal. When cover will be returned a "Tamper OFF" signal will be transmitted.
- **ANTI-MASKING** – If an attempt is made to mask the lens with a sticker or to put a masking object close to the lens, a trouble alert will result up to 180 seconds after masking

#### 4 Assembly Description

The FW2-EDS3000AM is a robust detector which includes indication LED prism that can be easily observed from long distance.

Having a back metal bracket, the FW2-EDS3000AM can be easily mounted to walls and poles using mounting screws (supplied) or metal bands.



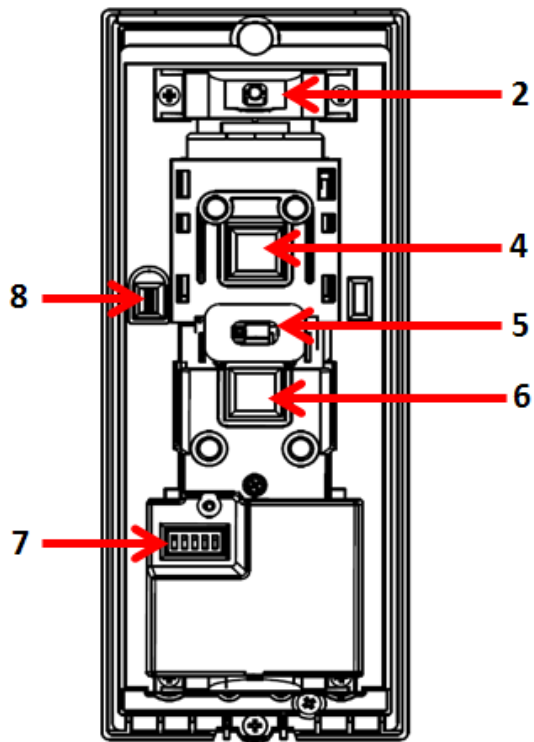
1	Front Cover
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2	LED Indicator
---	---------------

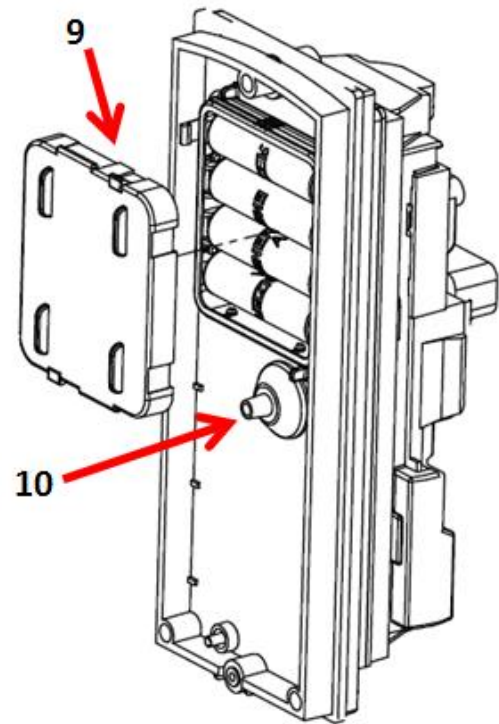
3	Detector Main Unit
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4	Back Metal Bracket
---	--------------------

Front view



Back view with battery



2	LED Detector
---	--------------

4	Upper PIR Element
---	-------------------

5	Anti-Mask Sensor
---	------------------

6	Lower PIR Element
---	-------------------

7	Dip Switches
---	--------------

8	Front Tamper Switch (Opening)
---	-------------------------------

9	Batteries Cover
---	-----------------

10	Back Tamper Switch (Removal)
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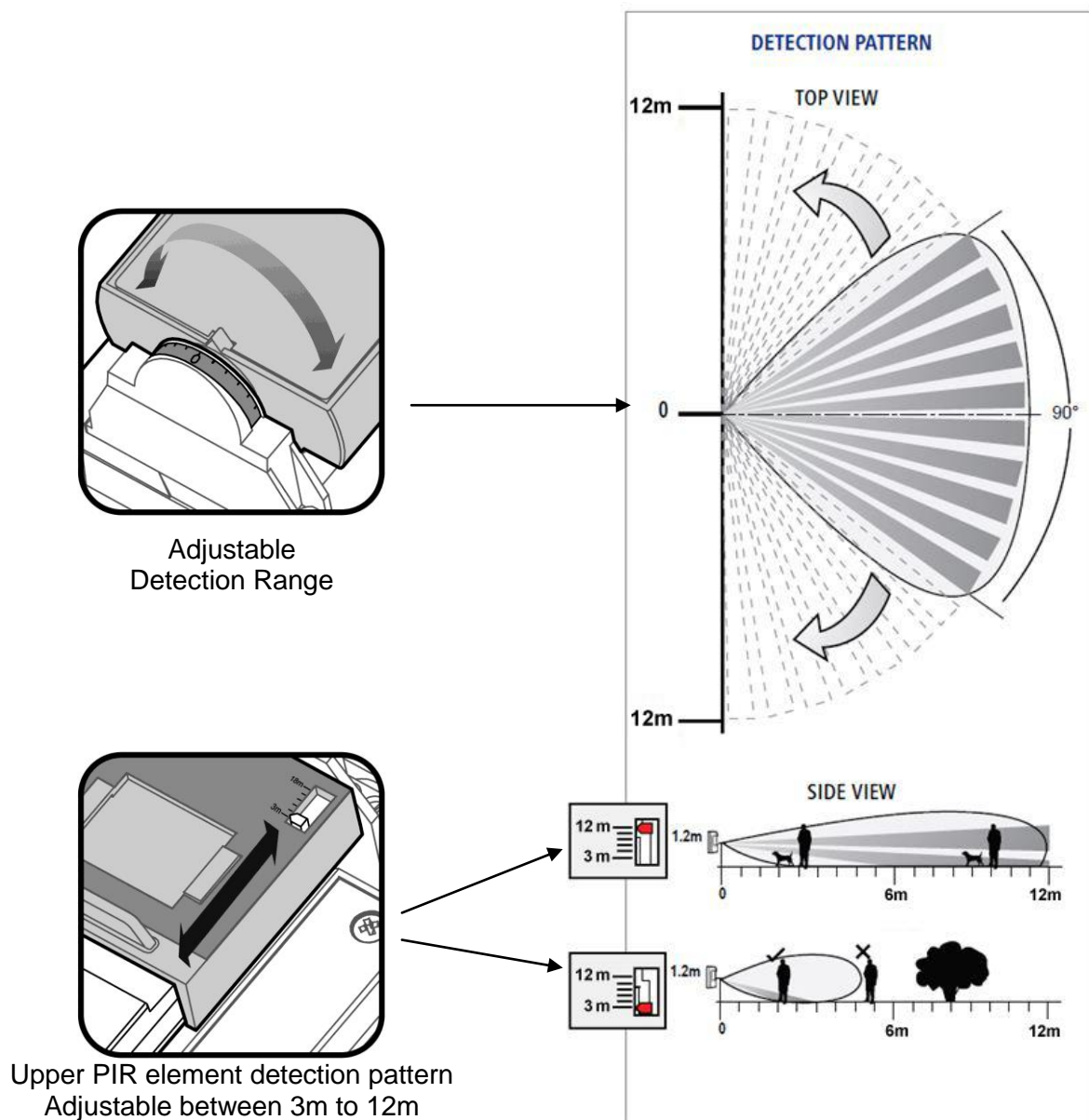
## 5 Detection Pattern

### 5.1 Range Adjustment

The FW2-EDS3000AM has a 90° top view Double PIR detection pattern with over 12m detection distance (when installed at 1.5m above the ground surface).

The FW2-EDS3000AM has an internal rotating housing (which includes the 2 PIR elements) that can be adjusted vertically, so its 90° coverage may vary between 0° and 180°.

The Upper PIR element can be horizontally adjusted to 5 different levels.

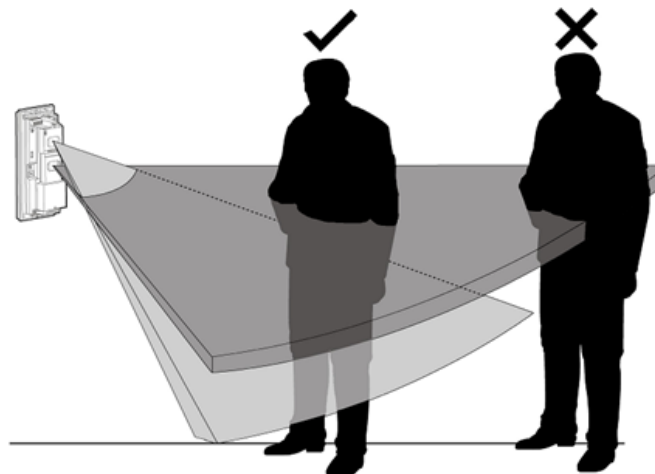


## 5.2 Pet Immunity

The FW2-EDS3000AM can differentiate between pets and human bodies and alert accordingly by having PIR detection beams movement detection:

- A. Lower PIR element which is fixed to 12m range and 60 cm above ground level which helps avoiding pets' detection over the entire area.
- B. Upper PIR element which has adaptive range between 3m and 12m.

By having both PIR detection beams detection the crossing object will be defined as intrusion, causing an alarm.





## 6 Learning & Installation

### 6.1 Select Mounting Location

The installation of the FW2-EDS3000AM requires straight and solid base for the detector and setting of front panel against the center of protected area.

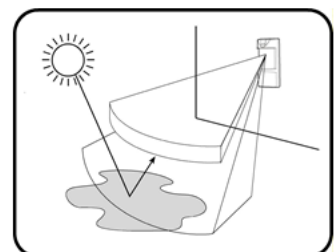
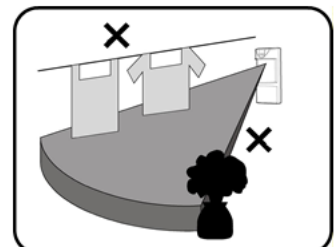
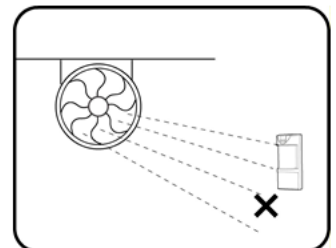
The protected area must be free from obstacles like walls, fences, trees, ditches and other microwave detectors, as well as systems of anti-intrusion surveillance.

The back metal bracket provides FW2-EDS3000AM installation on a wall or pole. The wall or pole should be leveled.

Choose a location most likely to intercept an intruder according to detection pattern on page 6.

#### **Avoid the following Installation Locations:**

- Facing direct sunlight.
- Facing areas subject to rapid temperature changes.
- Wall angle of more than 10° from perpendicular line.
- Mounting at more than 10° Deviation from horizontal line.
- Facing metal doors.
- Do not install near direct source of heat or air gust.
- Clear all physical obstacles from the detection area (e.g. Plants, laundries, etc.)
- Clear all light reflecting surfaces from the detection area, as well as water puddles.
- Avoid installation on the following types of ground:
- Thick vegetation, Grass (un-mown), Water, Sand and Metal.



#### **NOTE:**

Recommended installation height is 1.2m.

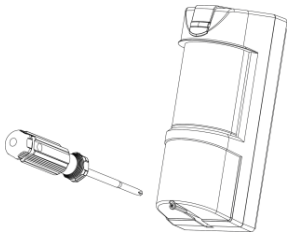
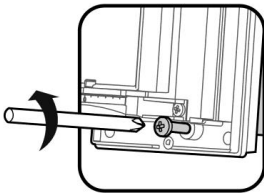
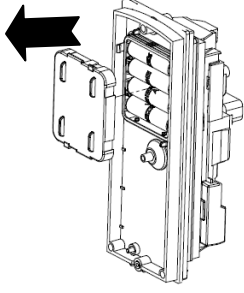
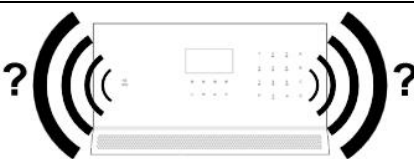
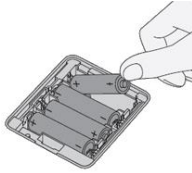


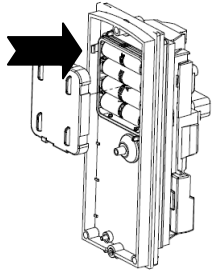
If there is a risk of tall pets (over 60cm) the detector is to be installed at 1.5m.

The Double Quad high quality sensor detects motion crossing the beam; it is less sensitive detecting motion towards the detector.

The FW2-EDS3000AM performs best when provided with a constant and stable environment.

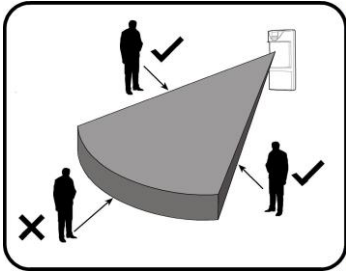
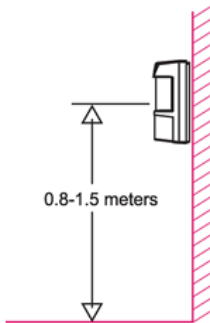
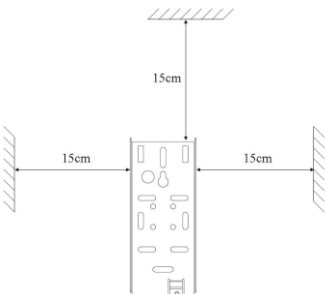
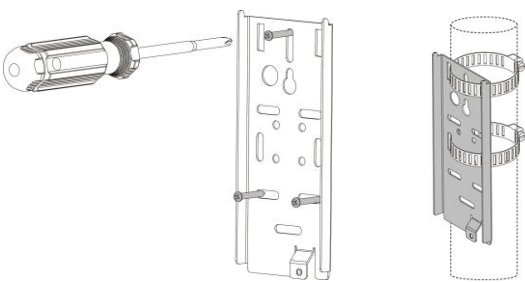
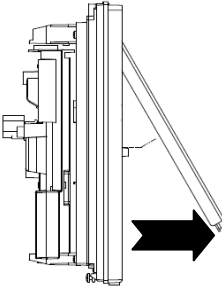
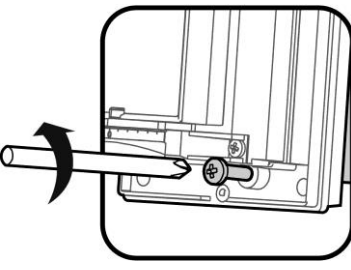
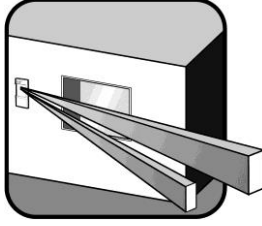
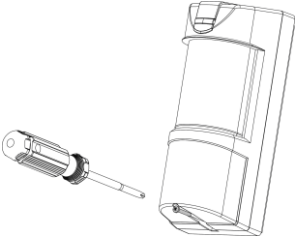
In order to ensure suitable operation of the FW2-EDS3000AM type of ground should be one of the following: Asphalt concrete, Cement, Soil, Clay, Gravel or Grass (mown).

## 6.2 Learning Procedure

<p>Open the detector unscrewing the bottom screw.</p>	
<p>Unscrew the detector unit from the back metal bracket and remove it by tilting it.</p>	
<p>Remove the batteries cover</p>	
<p>Initiate the control panel in "Zone" learning process (refer to the manual of your control panel for more information)</p>	
<p>Insert batteries in the detector respecting the polarity (+/-)</p>	
<p>LED of the detector will start blinking alternately Red/Green during the warm up and learning process (30 secs)</p>	 30 Sec during Warm Up and Learning
<p>The learning process should be completed within 30 seconds. Control panel will indicate completion at the end of the process.</p>	
<p>Close the battery cover</p>	

### 6.3 Detector Installation

**Important!** Prior to installation, read “Select mounting location” section carefully.

<p>1. Detector has to be installed in such manner that the intruder is most likely to cross the detection area from side to side.</p> 	<p>2. The detector has to be installed at height of 0.8m to 1.5m</p> 
<p>3. Draw metal bracket holes on the wall, leaving 15cm from all sides, for easy installation and maintenance.</p> 	<p>4. Install the metal bracket on the wall or a pole using mounting screws or metal bands.</p> 
<p>4. install the detector unit on the metal bracket</p> 	<p>5. Screw the detector unit to the back metal bracket</p> 
<p>6. Adjust the detection beam to reach the best detection range (refer to Part 7 "Settings &amp; Adjustments").</p> 	<p>7. Close the detector cover screwing the bottom screw</p> 



#### IMPORTANT NOTICE

After detector closure, the detector starts calibration process.

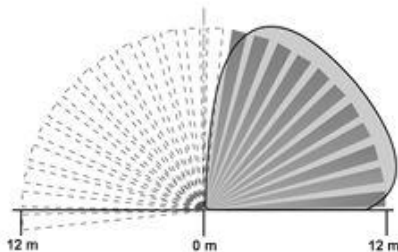
Do not stand in detector's range during this period of 3 minutes.

After this period, the detector is ready for operation

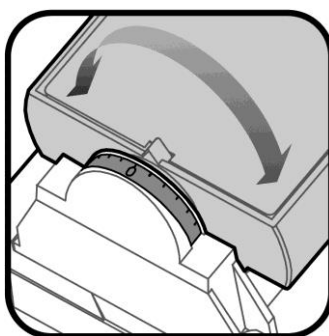
## 7 Settings & Adjustments

### 7.1 Detection beam direction

The FW2-EDS3000AM detection beam direction may vary between  $0^{\circ}$  and  $180^{\circ}$ .

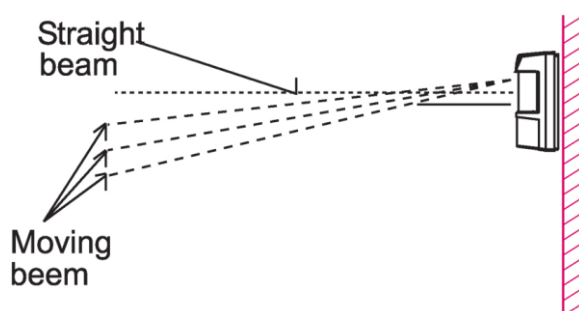


In order to change the detection beam direction rotate the internal detection element housing to the desired direction.

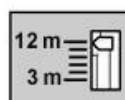
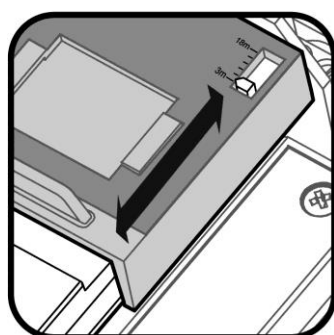


### 7.2 Detection range setting

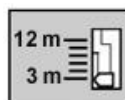
The FW2-EDS3000AM detection range may vary between 3m and 12m, while installed on 1.2m height above the ground surface.



Changing the detection range is achieved by sliding the upper detection element up or down:



Long Range

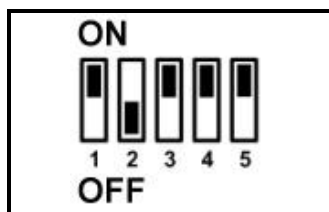


Short Range

Slide the detection element down for long range or up for short range detection.

### 7.3 Dip Switches Functions

There are 5 DIP switches on the FW2-EDS3000AM board that enable settings of following functions:



\*\* Factory Defaults Positions

ON = ENABLE	
SW1	PIR Sensitivity
SW2	
SW3	LED Indication
SW4	Anti-Mask Activation
SW5	Buzzer Audio
OFF = DISABLE	

#### Switches 1 & 2 – PIR ELEMENTS SENSITIVITY SETTING

Use the following combinations for setting PIR upper and lower element sensitivity control according to the environment.

Switch Position		DESCRIPTION
SW1	SW2	
OFF	OFF	LOW SENSITIVITY
OFF	ON	MEDIUM SENSITIVITY
**ON	**OFF	** NORMAL SENSITIVITY
ON	ON	HIGH SENSITIVITY

#### Switch 3 – LED VISUAL INDICATION

Use for setting LED Enable / Disable

\*\* UP Position (ON) – LED enabled

DOWN Position (OFF) – LED disabled

**Note:** the state of the switch “LED” does not affect the operation of the ALARM and TROUBLE relays.

#### **Switch 4 – ANTI-MASK ACTIVATION**

Use for Anti Mask function setting

\*\* UP Position (ON) – AM feature enabled

Down Position (OFF) – AM feature disabled

#### **MASKING CONDITION**

If an attempt is made to mask the lens with a sticker or to put a masking object close to the lens, a trouble alert will result up to 180 seconds after masking:

The Red LED will blink and the TROUBLE (Tamper) will be transmitted.

#### **RESET AFTER TROUBLE OR MASKING**

In case of masking alarm, proceed as follows:

Search for masking material or objects on the lens or in front of the detector and remove them.

Reset the detector by walking in front of it. Cross its field detection causing it to alarm several times.

If everything is back to normal, the LED should stop blinking, and the TROUBLE should reset.

**Note:** If walk testing does not cause the trouble alert to stop, recheck for masking.

#### **Switch 5 – BUZZER AUDIO INDICATION**

Use for setting Audio Buzzer Enable / Disable

\*\* Up Position (ON) – Buzzer enabled

Down Position (OFF) – Buzzer disabled

Setting the buzzer ON gives the installer the ability to hear a beep on each detection for 1.8 seconds during the adjustments and walk test. After this process it is recommended to switch the buzzer OFF.

## 8 Test procedure

### Walk Test Procedure:

- Allow 3 minutes of warm up time.
- Make sure that the protected area is cleared of all people.
- Initialize the "Walk test" mode on your control panel
- Start walking across the detection zone.
- Listen to ALARM sound whenever motion is detected (the red LED and the Buzzer also turns ON whenever motion is detected).
- 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 coverage range or relocate the detector.

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

## 9 Specifications

<b>Detection Method</b>	Double PIR Elements with optional Antimasking feature
<b>Data Protocol</b>	Freewave2 – Unique ID Serial Number (24 bits)
<b>Frequency</b>	868-869MHz / 916-917MHz
<b>Events Transmission</b>	Alarm, Anti-Mask, Tamper, Supervision, Low Bat
<b>Supervision Time</b>	7 min by default (configurable between 1 to 30 minutes)
<b>Range in open space</b>	500m
<b>Battery</b>	4 Batteries 1,5V Type AA LR06
<b>Battery life</b>	Up to 5 years
<b>Current Consumptions</b>	Standby ~11 $\mu$ A Receive mode ~24 mA Transmit mode ~45 mA Transmit power ~14dBm
<b>Tamper Switch</b>	Front Cover and Wall Removal
<b>Temp Compensation</b>	Yes, Dual slop temperature compensation
<b>Alarm Period</b>	2 sec ( $\pm 0.5$ sec)
<b>Warm up Period</b>	180 sec ( $\pm 5$ sec)
<b>LED Indicator</b>	LED is ON during ALARM and TROUBLE
<b>Operation Temp</b>	-35°C ~ +55°C
<b>Protection Degree</b>	IP 65
<b>Dimensions</b>	200mm x 86mm x 80mm
<b>Weight</b>	500gr.

\* Specifications are subject to change without prior notice.



### **CROW LIMITED WARRANTY**

(CROW) warrants this product to be free from defects in materials and workmanship under normal use and service for a period of two years from the last day of the week and year whose numbers are printed on the printed circuit board inside this product.

CROW's obligation is limited to repairing or replacing this product, at its option, free of charge for materials or labor, if it is proved to be defective in materials or workmanship under normal use and service. CROW shall have no obligation under this Limited Warranty or otherwise if the product is altered or improperly repaired or serviced by anyone other than CROW.

There are no warranties, expressed or implied, of merchantability or fitness for a particular purpose or otherwise, which extend beyond the description on the face hereof. In no case shall CROW be liable to anyone for any consequential or incidental damages for breach of this or any other warranty, expressed or implied, or upon any other basis of liability whatsoever, even if the loss or damage is caused by CROW's own negligence or fault.

CROW does not represent that this product can not be compromised or circumvented; that this product will prevent any person injury or property loss or damage by burglary, robbery, fire or otherwise; or that this product will in all cases provide adequate warning or protection. Purchaser understands that a properly installed and maintained product can only reduce the risk of burglary, robbery or other events occurring without providing an alarm, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss or damage as a result.

Consequently, CROW shall have no liability for any personal injury; property damage or any other loss based on claim that this product failed to give any warning. However, if CROW is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regardless of cause or origin, CROW's maximum liability shall not in any case exceed the purchase price of this product, which shall be the complete and exclusive remedy against CROW.



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