

OUT-SMART

Manual

OUT-SMART

Outdoor/Indoor dual technology intrusion detector that combines 2 independent PIR detection zones for increased reliability, plus microwave sensor.

FEATURES

- * Dual Technology: 2 x PIR sensors plus Microwave sensor.
- * Flexible installation height, between 1 ~ 2 meters.
- * Pet immune.
- * Anti-masking.
- * Selectable horizontal detection angle 120°, 105°, 90°.
- * Waterproof and all weather resistance.
- * Remote controlled
Detector settings can **also** be controlled by Remote Control (option).
- * Anti-vandalism sensor (Shock & Vibration).
- * Bracket-free mounting, Multi-directional: Aiming is done within the detector. Internal unit rotates horizontally 180 degrees.
- * Auto Night Detection Range.
- * Tone indication.
- * DVR/Camera Trigger.
- * Front and back TAMPER switch.



Remote control
for all settings (Option)

MAXIMUM Security (1984) Ltd.

www.maximum.co.il

CONGRATULATIONS

We thank you for choosing a product of MAXIMUM Security (1984) Ltd. Based on over 26 years experience in R&D and in production of advanced security systems, we are proud to introduce to you the finest Outdoor / Indoor motion detector ever presented, for industrial, commercial and residential security.

To ensure proper operation and maximum use of all its benefits, please read all parts of this installation and operating manual, and follow the step-by-step instructions.

CRUTIAL NOTES

1. The protected area must be safeguarded by additional detection means and internal detectors.
2. Similar to other products, this product can be cheated and defeated.
3. This product, as any other, may malfunction or become damaged during regular use or a result of vandalism.
4. A comprehensive inspection of the product in terms of proper activity and performance should be conducted on a weekly basis by individual qualified in writing by the manufacturer to do so.

INTRODUCTION

Detection reliability

OUT-SMART is an Outdoor/Indoor dual technology intrusion detector, which maximizes movement detection reliability by combining **two independent PIR detection zones** and a microwave sensor.

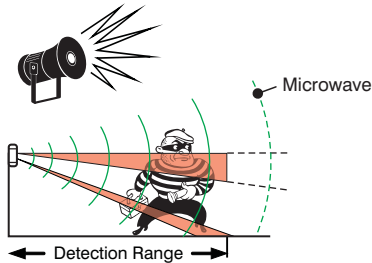
The Upper PIR detection zone is parallel to the ground while the Lower PIR detection zone is diagonal.

Both Upper and Lower PIR detection zone sensitivity levels can be adjusted separately.

OUT-SMART will alert only if both PIR detection zones and the supportive microwave radiation are crossed at the same time.

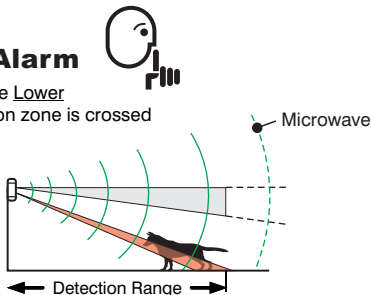
ALARM !!!

Upper and Lower
detection zones
are crossed



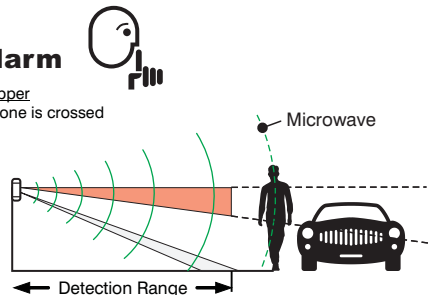
No Alarm

Only the Lower
detection zone is crossed



No Alarm

Only the Upper
detection zone is crossed



Installation height flexibility

The installation height is not limited to a short elevation but from 1 ~ 2 meters (see page No. 7, 8, 9).

Pet immune

As seen in the drawing above, OUT-SMART will generate an alarm only when both PIR detection zones and the supporting microwave sensor provide simultaneous detection.

When a pet crosses only one of the two PIR detection zones, there will be no alarm.

Anti-masking

In addition to an unprecedented amazing and reliable detection capability, OUT-SMART is equipped with excellent protection against any attempt to disable its operation by blocking (masking) its near field-of-view, whether the alarm system is Armed or Disarmed (*Anti-masking protection*).

The protection against masking the near field-of-view of the detector is achieved by a continuous active infrared beam scan.

Selectable horizontal detection angle 120°, 105°, 90°

The horizontal detection coverage angle can be reduced and limited from 120° to 105° or 90° by placing 2 or 4 provided blockers respectively (see page No. 6).

Waterproof and all weather resistance

Thanks to its state-of-the-art design, OUT-SMART is waterproof and all weather resistance.

Remote controlled

Detector settings can also be controlled by an optional Remote Control:

- * PIR detection sensitivity of each sensor separately.
- * Microwave detection sensitivity.
- * Anti-masking sensitivity and also entering the Study mode.
- * Auto Night Detection mode.
- * DVR/Camera Trigger.
- * LED indicators.
- * Tone indication.
- * Anti-vandalism sensor (Shock & Vibration).
- * Relay logic (N.C. / N.O.) and activation time.

Bracket-free mounting, Multi-directional

Aiming is done within the detector.

The internal unit rotates horizontally 180 degrees (see page No. 6).

Anti-vandalism sensor (Shock & Vibration)

Anti-case-shifting, by inertial switch that alerts if someone shifts, moves or turns the detector.

Auto Night Detection mode

An option enabling the detection range to be automatically changed to a different re-programmed detection range at night (darkness). (see page No. 10, 20, 22).

Tone indication

An option to set a tone (sound) that will be heard during any detection event.

DVR/Camera Trigger

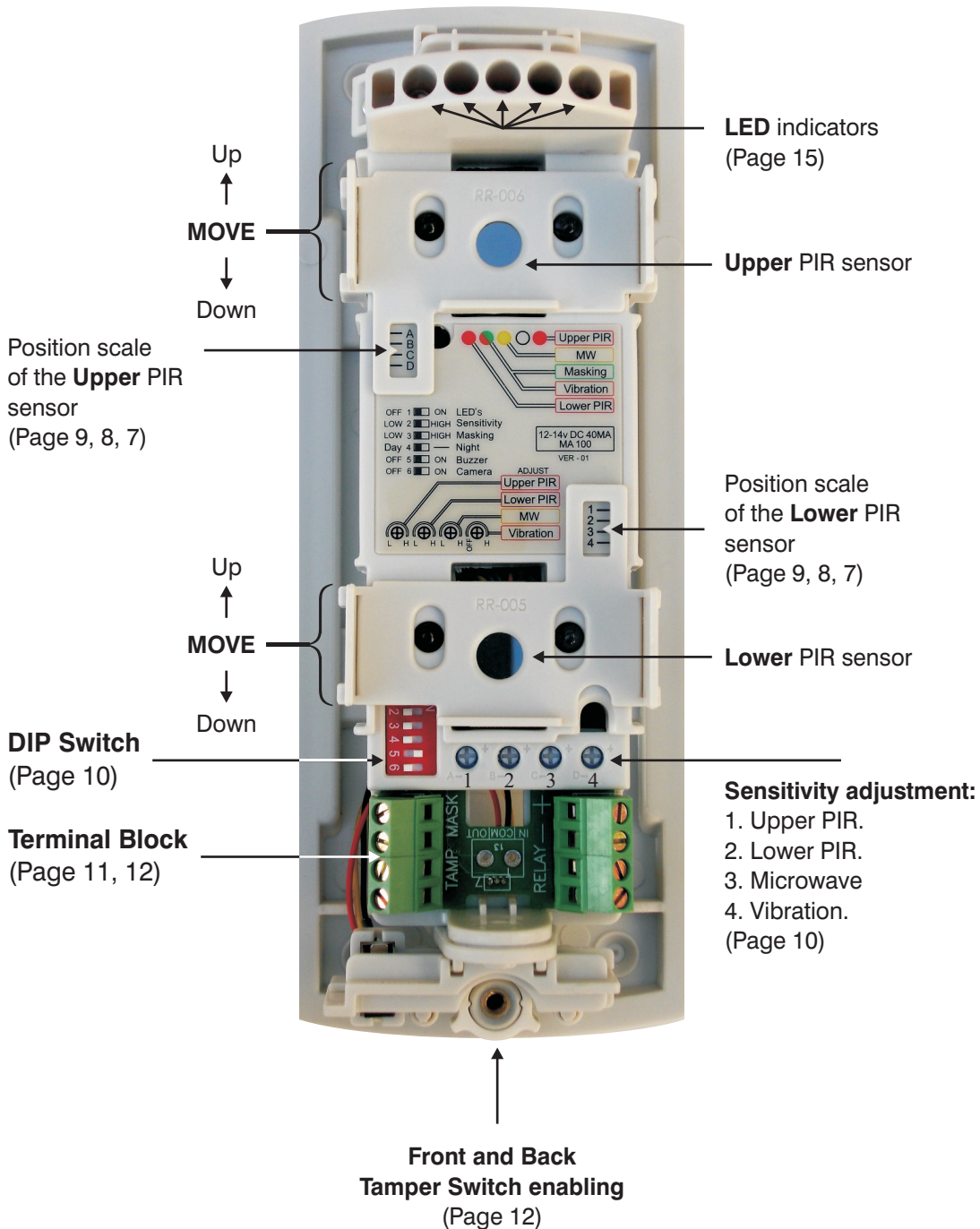
The RELAY output will be activated for 10 seconds each time actual detection event occurs. (see page No. 11, 12).

Front and back TAMPER switch

OUT-SMART is equipped with a front and back TAMPER switch (located next to the terminal block).

The TAMPER switch protects against opening the front cover of the detector and against disassembling the back cover of the detector from the surface it is mounted on.

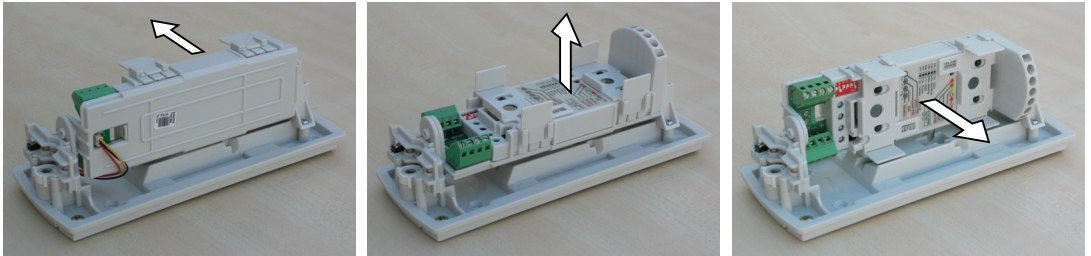
In order to enable the back TAMPER switch, the provided ring should be placed around the fixing screw of the case on the back panel. See description below (see page No. 12).



DETECTION FIELD-OF-VIEW

OUT-SMART is Bracket-free, Multi-directional

Full horizontal aiming (180°) is done within the detector by turning the internal unit horizontally:

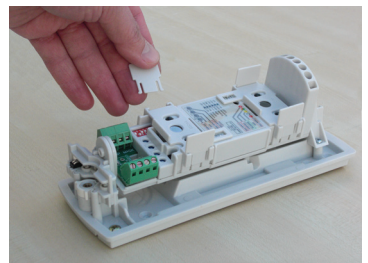
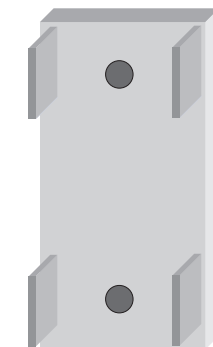
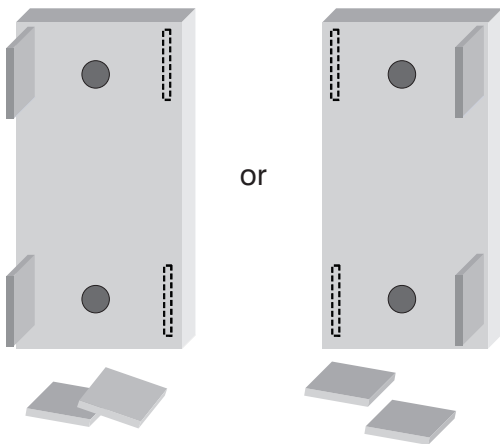


Reduce and limit horizontal detection coverage angle to 105° or 90°

The horizontal detection coverage angle can be reduced and limited from 120° to 105° or 90° by placing 2 or 4 provided blockers respectively.

Limit the detection coverage angle to 105°

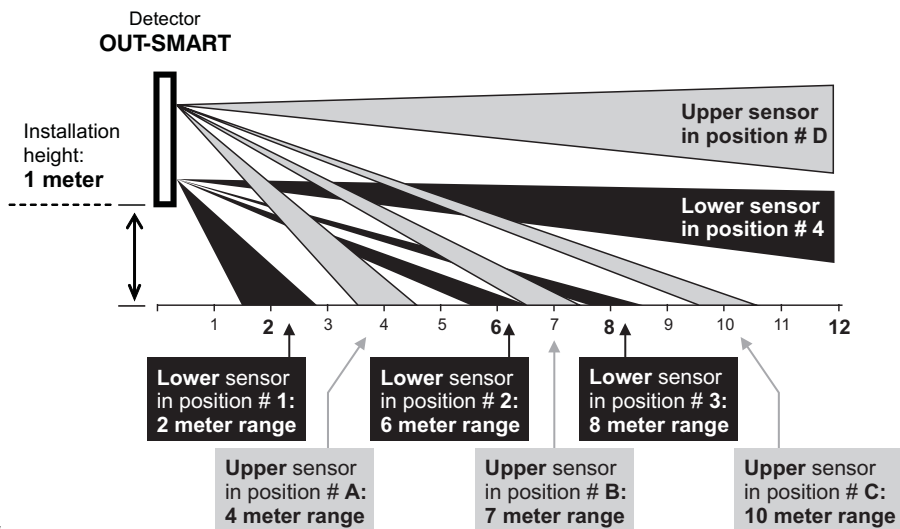
Limit the detection coverage angle to 90°



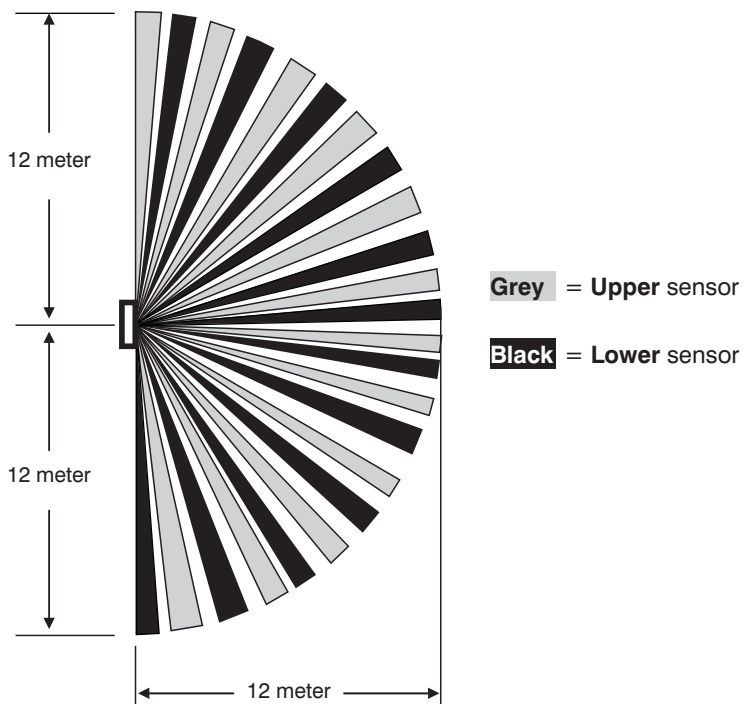
DETECTION PATTERN

For **1 meter** installation height

Side view



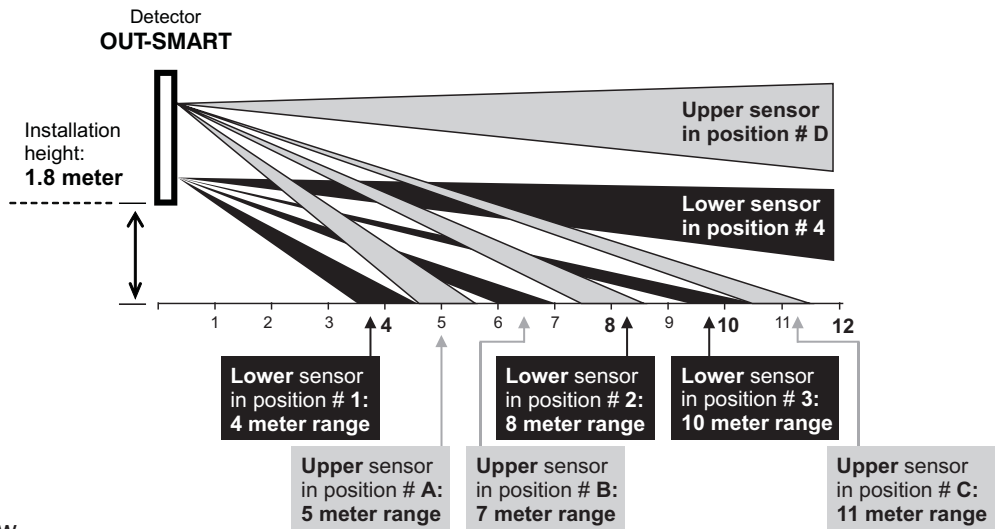
Top view



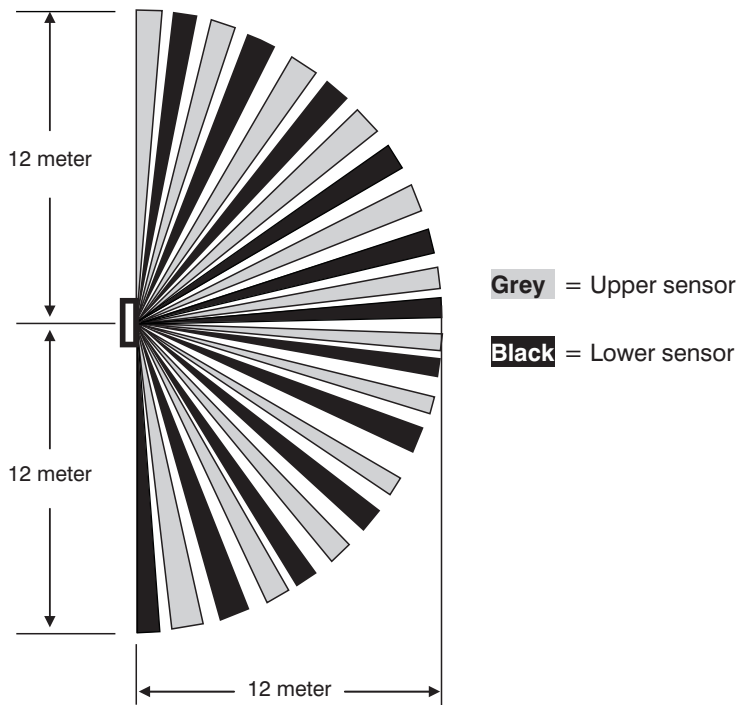
DETECTION PATTERN

For 1.8 meter installation height

Side view



Top view



Installation height

The installation height is between 1 ~ 2 meters.
The upper and lower PIR sensor must be moved up or down according to the installation height of the detector (see table below).

1. Upper PIR sensor.

Move the upper PIR sensor (part No. RR-006) up or down according to the following table:

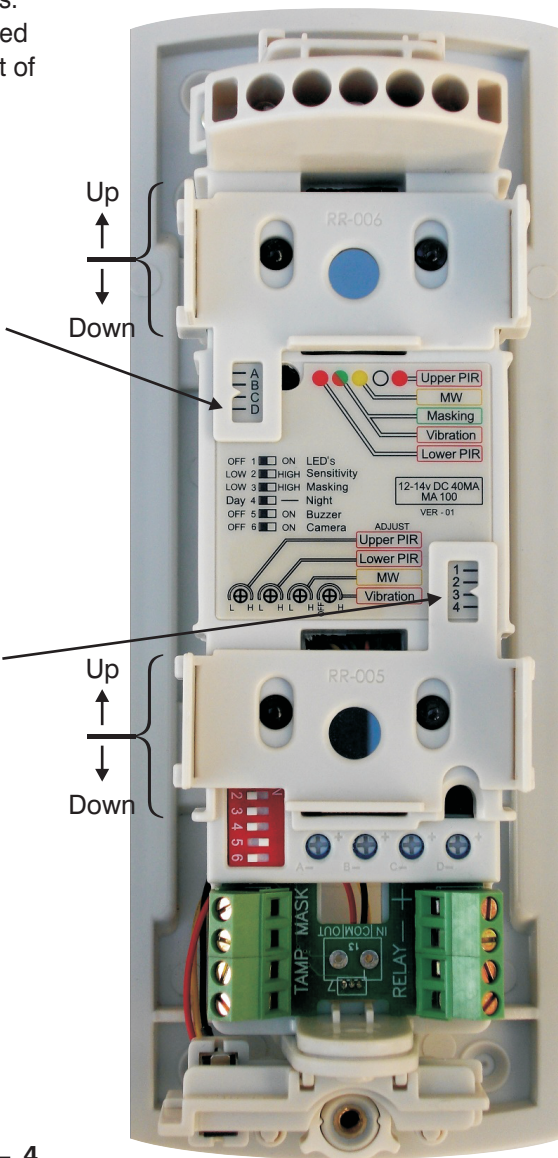
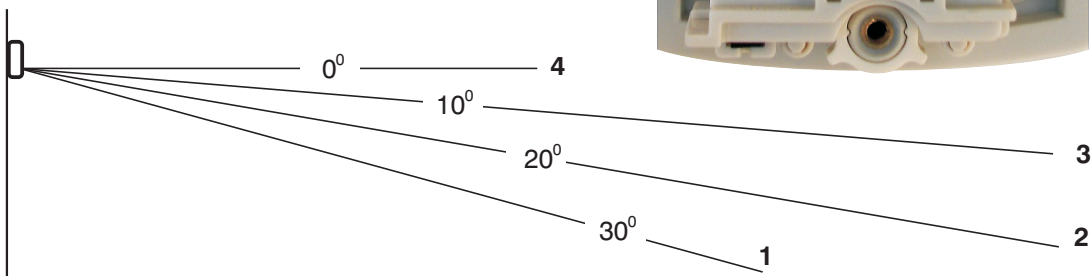
Installation Height	Letter indicated on the Scale
1.0m	A
1.5m	B
1.7m	C
2.0m	D

2. Lower PIR sensor.

Move the lower PIR sensor (part No. RR-005) up or down according to the following table:

Required declination Angle	Number indicated on the Scale
0°	4
10°	3
20°	2
30°	1

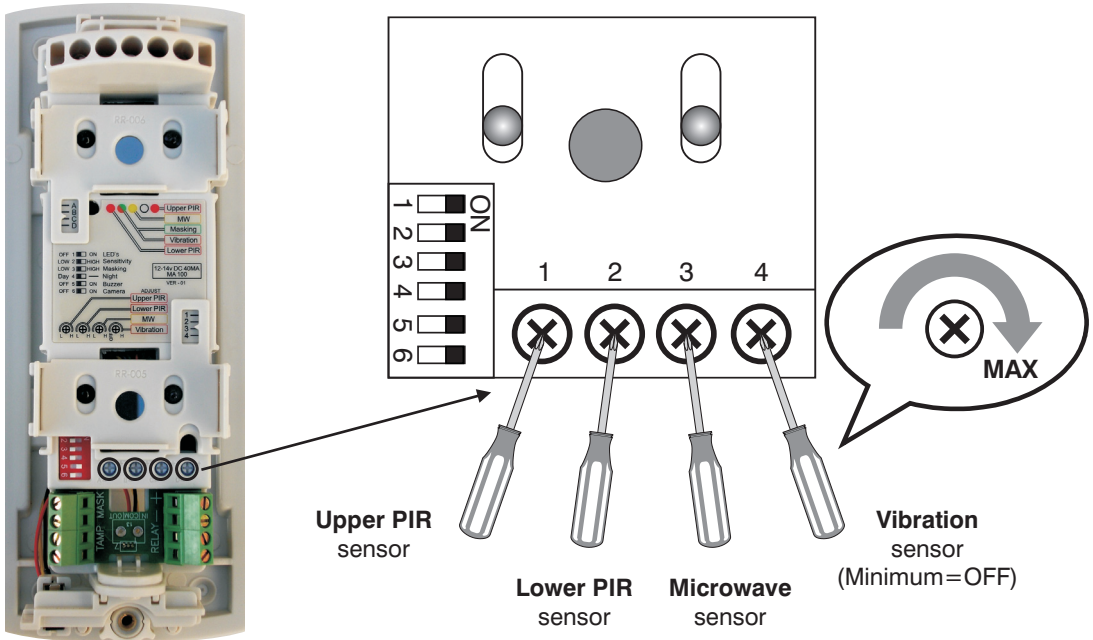
Declination angel of the lower PIR sensor beam:



DIP SWITCH SETTING

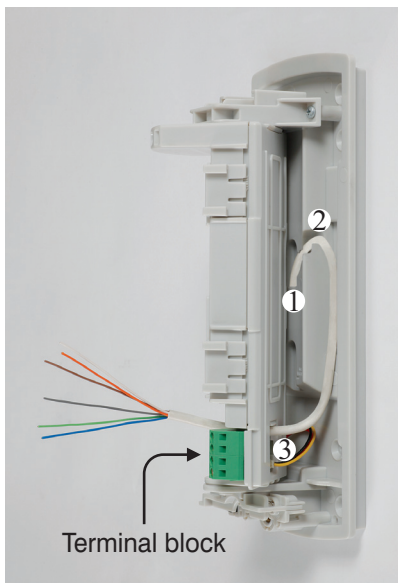
{ LEDs }	#1	OFF  ON	
{ Motion Detection Sensitivity }	#2	Low  High	{ Set to High mode only in locations free of any obstacle, and in semi-closed areas (such as balconies and roofed locations). }
{ Anti-masking Sensitivity and Study }	#3	Low  High	{ Switch to High only when no intense light around. For " Study " procedure, see page No. 13. }
{ Auto Night Detection range }	#4	OFF  ON	{ Set to " ON " if at night (darkness) you would like the detection range to be changed automatically to a different detection range (see page No. 20, 22 - Remote Control). }
{ Tone indication }	#5	OFF  ON	{ Setting a tone (sound) that will be heard upon every detection event. }
{ DVR/Camera Trigger }	#6	OFF  ON	{ The alarm <i>RELAY</i> contacts will be activated for 10 seconds every time an actual detection event occurs. }

SENSITIVITY SETTING (by a rotary trimmer)



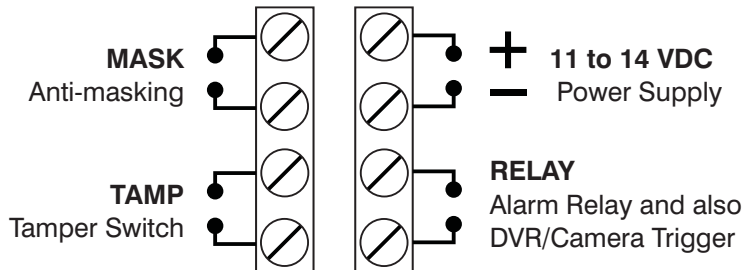
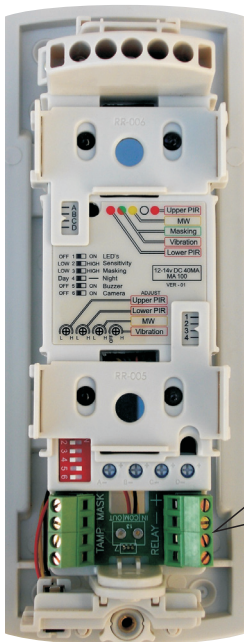
All above detector settings can also be controlled by the optional Remote Control, model RM-1, page 17

The route of the cable to the terminal block



1. Entry cable hole on the back panel.
2. Cable tunnel on the back panel.
3. Hole at the bottom of the internal unit.

TERMINAL BLOCK WIRING



WIRING SPECIFICATIONS

+ -

Those are the 11V to 14V DC power supply inputs.

RELAY

Represents the contacts of the “*Alarm Relay*”, which are Normally Closed (N.C.). Upon detection of any human movement, the relay’s contacts are opened for two seconds. These terminals can also be used to trigger a DVR/Camera.

For that purpose, DIP switch No.6 should be switched to ON (page No. 10), so the “*Alarm Relay*”, output will be activated for 10 seconds every time an actual detection event occurs.

MASK

Represents the contacts of the “*Anti-masking Relay*” which are normally in closed state (N.C.). If an object blocks (masks) the detector’s near field-of-view for more than 90 seconds, the contacts will open for at least 2 seconds and will remain open for as long as the masking exists.

TAMP

Represents the contacts of the built-in TAMPER switch, which are Normally Closed (N.C.). The contacts will open when the detector’s case is opened.

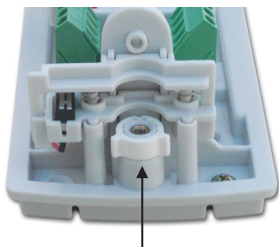
These contacts will also open when the detector’s case is removed from the wall (valid only if the **back** TAMPER switch has been enabled. Read this page to the end).

FRONT AND BACK TAMPER SWITCH

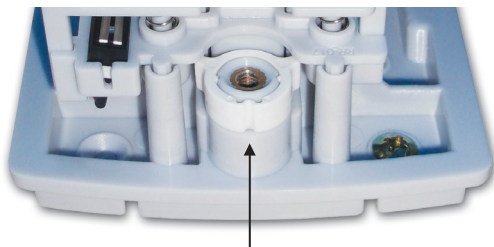
OUT-SMART is equipped with a front and back TAMPER switch (located next to the terminal block).

The TAMPER switch protects against opening the front cover of the detector and against disassembling the back cover of the detector from the surface it is mounted on.

To disable only the back Tamper switch, turn over the ring placed around the fixing screw sleeve of the case located on the back panel so its 2 teeth are aiming towards the top of the detector. See description below:



Back Tamper switch Enabled



Back Tamper switch Disabled

PREPARING THE MASKING CHANNEL FOR OPERATION (Study procedure)

(Obligatory for proper Anti-masking operation!!!)

To enable proper operation of the masking detection (*Anti-masking*), it is necessary to allow the detector to automatically study and analyze the environmental conditions of its protected area. This is an obligatory action that should be performed by the installer, ensuring proper operation of the Anti-masking channel!!!

Study procedure to be performed in two cases:

1. Upon connecting the power supply to the detector (after about 1 minute, the time it takes the detector to stabilize when first fed by power supply).
2. Upon changing the internal unit position or changing any PIR sensor position.
3. Upon changing the position of DIP switch number-3 (Anti-masking Sensitivity).

Study procedure:

- Once one of the above 3 items has been performed, proceed as follows:
- Immediately close the detector case (within 15 seconds maximum).
- Keep at least 1 meter away from its front part, until the study procedure is complete, approximately 1 minute.

LED indication during the study procedure (see top of page No. 5):

1. The following LED indicators blink rapidly for about 30 seconds: Right Red + Left Red + Green.
2. A pause of about 20 seconds (none of the LED indicators is activated).
3. The following LED indicators blink rapidly for about 10 seconds: Right Red + Left Red + Green.

CLOSING THE DETECTOR'S CASE



First, attach only the upper part of the cover (in an angle of about 30°).
Then, close the lower part of the cover.



Screw the fixing screw.



Cover the fixing screw with the provided cover.



The fixing screw is covered.

PERFORM A TEST

* To be carried out when the case is closed and the LED indicators are enabled (DIP switch No.1 switched to ON, page No. 10).

Test procedure for human movement detection (Alarm):

- Walk in the protected area.
- Compulsory reaction of the detector:
Upon each detection, the “*Alarm Relay*” will operate for 2 seconds.
The following LED indicators will blink simultaneously during those 2 seconds: Right Red + Left Red + Green.

Test procedure for masking detection (Anti-masking):

- Place a white piece of paper at a distance of about 10 cm from the front of the detector.
- Compulsory reaction of the detector:
The Green LED will instantly blink continuously as long as the masking object exists.
If the masking object exists for more than 90 seconds, the orange LED will glow continuously and the “*MASK*” (*Anti-masking*) relay will operate for at least 2 seconds and for as long as masking exists.

OUT-SMART activates its relays and LED indicators according to the type of detection as follows:

TYPE OF DETECTION	LED INDICATORS	RELAY STATUS
Upper PIR sensor	Right Red activates for 2 seconds	No relay will activate
Lower PIR sensor	Left Red activates for 2 seconds	No relay will activate
Microwave sensor	Yellow activates for 2 seconds	No relay will activate
Alarm- Actual motion detection	<u>Right Red</u> + <u>Left Red</u> + <u>Green</u> Blinks simultaneously for 2 seconds	The ALARM relay will activate for 2 seconds
Anti-masking sensor	Green Blinks then constantly glows as long as masking persists	If masking persists for more than 90 seconds, the Green LED will glow continuously, and the MASK relay will operate for at least 2 seconds and for as long as the masking exists
Vibration & Shock sensor	Orange activates for 2 seconds	The MASK relay will activate for 2 seconds

SPECIFICATIONS

- Power supply 11 to 14V DC
- Current drain Standby: 35mA (Max.); Operation: 70 mA (Max.)
- *Alarm relay* contacts endurance 15V DC / 20 mA
- *Anti-masking relay* contacts endurance 15V DC / 20 mA
- TAMPER Switch endurance 15V DC / 20 mA
- Warm-up time 1 Minute
- Alarm period 2 Seconds
(Programmable from 1 to 99 Seconds by the optional Remote Control)
- *Anti-masking relay* respond time 90 Seconds (Max.)
(Programmable from 1 to 99 Seconds by the optional Remote Control. Page 17 to 22)
- *Anti-masking relay* activation period As long as Masking persists
(at least 2 seconds)
- Motion detection coverage Selectable 90°, 105° or 120°, 12 meter
- Operating Temperature (-)37 ~ (+)70°C

RM-1

OUT-SMART Remote Control

Manual

INTRODUCTION

RM-1 is a Remote Control that works with the OUT-SMART detector and other products of MAXIMUM Security (1984) Ltd.

RM-1 is an optional product, complementary accessory for OUT-SMART.

This guide refers to the operation of RM-1 with the OUT-SMART detector.

Here is a partial list of the features you may set/program in the OUT-SMART detector by means of the **RM-1** Remote Control:

1. Upper PIR detection sensitivity level and Number of Pulses.
2. Lower PIR detection sensitivity level and Number of Pulses.
3. Microwave detection sensitivity level and Response Time.
4. Anti-masking detection sensitivity level and Response Time, plus enter into learn mode.
5. LED indicators enable.
6. Vibration and Shock detection and adjustment of sensitivity level.
7. Relay logics (N.C. / N.O.) and activation time.
8. Increased RF immunity.
9. DVR/Camera trigger enable.
10. Buzzer enable.

All the features that can be set/programmed in the OUT-SMART detector by means of the **RM-1** Remote Control are described in details in the Operating Diagram on page 22.

CRUCIAL NOTES!

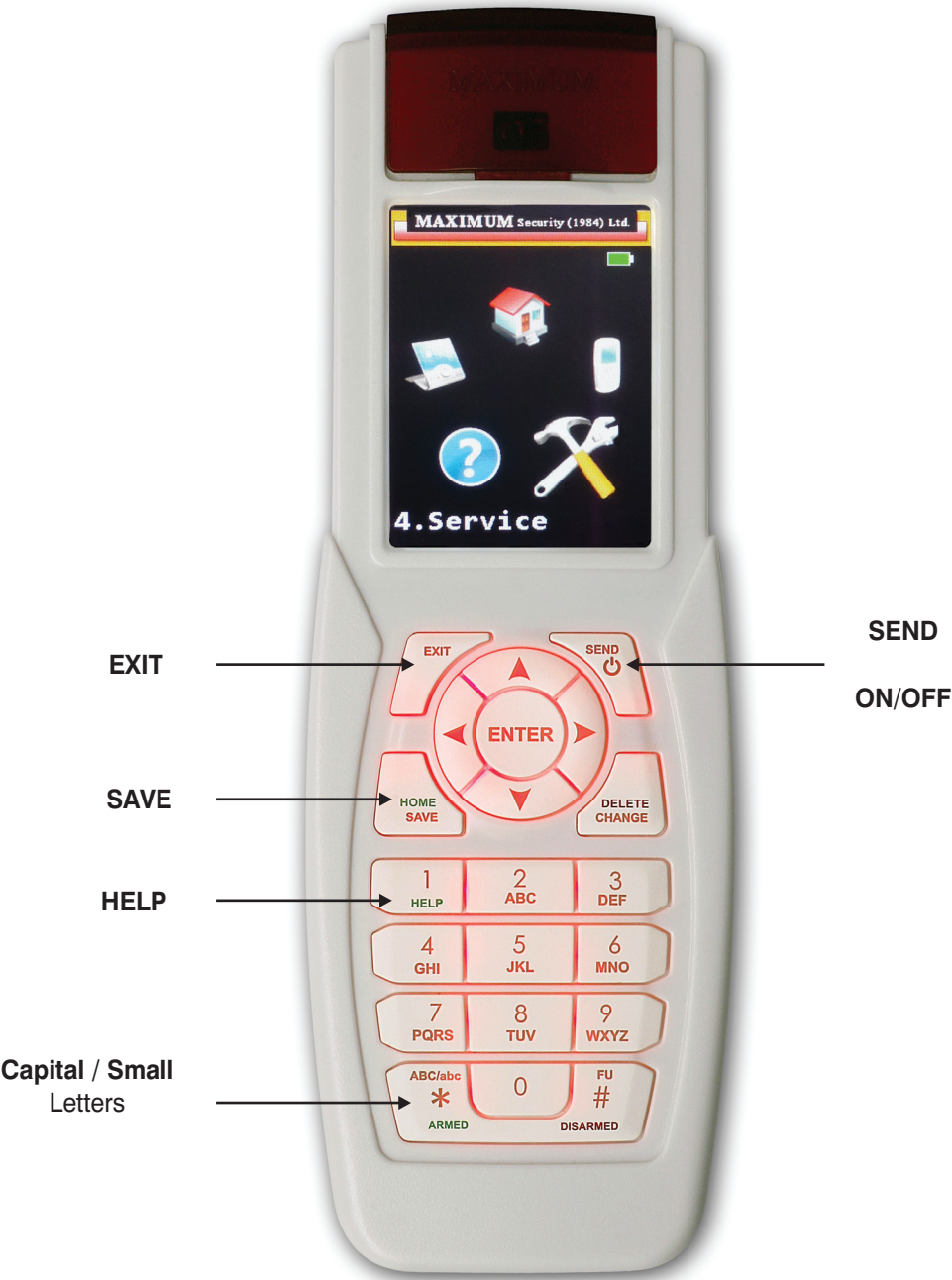
1. OUT-SMART detector will only operate according to the parameters that have been set/programmed by the **RM-1** Remote Control just in the following two conditions:
 1. All the DIP switches of the OUT-SMART detector are in OFF position. ^(*)
 2. The OUT-SMART detector has been set/programmed by the Remote Control to enter the mode of "Remote Enable".

This is the programming route in the Remote Control: Detectors → OUT-SMART → Exist Device → Enter Device Code → ...Program Detector → Remote Mode.

(*) In the even the position of even one of the DIP switches in the OUT-SMART detector has been changed, the detector will resume operation according to its physical settings- as indicated in the Operating Guide.

2. While data from the Remote Control is being received by the detector, all the detector relays will open for a few seconds.

The Remote Control Appearance



Power ON/OFF

The power button is located on the top right corner of the keyboard.

A short press will switch ON the Remote Control.

To switch OFF the Remote Control, press and hold the power button until it switches OFF (Press for about 2 seconds).

The power will go OFF automatically if its keyboard was not in use for more than 3 minutes.

Navigation

There are 2 ways to enter any feature menu:

1. Use the arrows to select the required feature, then press **ENTER**.
2. Directly enter the number alongside the required feature.

Do the same to set the value/parameter once you are inside the feature menu.

Help

To get online help at any stage, press and hold the HELP button (key number 1).

To close the help window, press any button briefly.

Step 1 of 3

Programming a code for the detector

1. Open the detector case.
2. Switch OFF all DIP switches except DIP switch number 1.
3. Now, switch OFF DIP switch number 1.

As a result, all the LED indicators will blink 3 times, and the detector is now in stand-by mode to receive and study the unique code that will be transmitted by the Remote Control.

(The stand-by mode will cease within approximately 3 minutes if the next instructions have been not performed).

4. Switch ON the Remote Control → Select DETECTORS → then select OUT-SMART then → **New Device**.
5. **ENTER CODE** [- - - -] (Enter a 4 digit code you assign to the detector).
6. Aim the Remote Control towards the detector, then press **SEND** (the Power key).
7. Once the code from the Remote Control is received by the Detector, the Remote Control screen will display **OK**.
8. The Detector will blink a few times and will instantly exit the Remote Control mode of code study.

Step 2 of 3

Entering the detector Programming

Reminder

While data from the Remote Control is received by the detector, all the detector relays will open for a few seconds.

1. Switch ON the Remote Control → Select DETECTORS → then select OUT-SMART then → **Exist Device**.
2. ENTER DEVICE CODE [- - - -] (Enter the 4 digit detector code you wish to handle).
3. Press **ENTER**.
4. Select to program the detector parameters for NORMAL MODE or NIGHT MODE operation.

You can program the detector to operate differently during the day than at night (during darkness).

For example, during the night you may wish to set a higher sensitivity (longer range) and disable the LED indicators.

5. Press READ DETECTOR if you want to extract the detector parameter list to the Remote Control.

Then, you will have 3 options:

- a. Save the parameters in the Remote Control memory.
 - b. Modify the parameters on the Remote Control and **SEND** them back to the detector in order to modify its setting.
 - c. **SAVE** the modified parameters in the Remote Control memory.
- Press SAVED PROGRAM to load the list of saved programs.
6. Press any program title to display its list of parameters, after which you have 3 options:
 - a. **SEND** the original parameters to the detector.
 - b. Modify the parameters on the Remote Control and **SEND** them to the detector in order to modify its setting.
 - c. **SAVE** the modified parameters under the same program name or under a different program name in the Remote Control memory.

Step 3 of 3

Setting/Programming the parameters of the detector by the Remote Control

Pressing **PROGRAM DETECTOR** will display the detector's complete list of features. Select and **ENTER** any one of the features to set/program its parameters.

This is the programming route: Switch ON the Remote Control → Select DETECTORS → OUT-SMART → EXIST DEVICE → ... **PROGRAM DETECTOR**

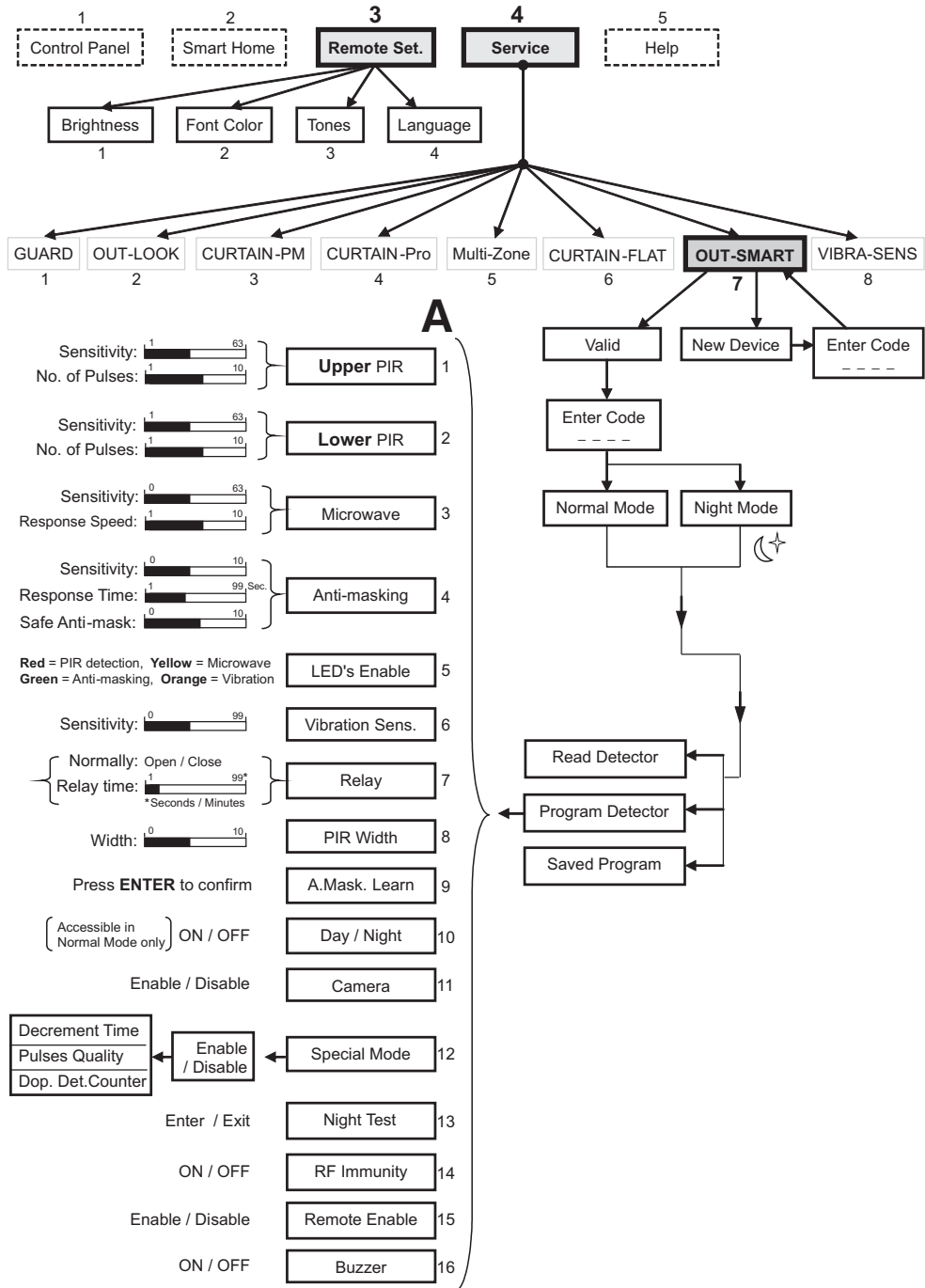
The 16 features and their parameters are detailed in the Operating Diagram on page 22 (marked with the letter **A**).

Power supply and batteries specifications of the Remote Control RM-1

- * Battery Type: 3 x 1.2V AAA. High Power Rechargeable Batteries (Ni-Mh or Recyko).
- * Charger Output: 5V, 1A DC.
- * Operating Time: About 5 Hours (with 1000mA/HPR Batteries).

* Polarity: -  +

RM-1, Operating Diagram



CERTIFICATE OF WARRANTY

MAXIMUM Electronics (1984) Security Ltd. thanks you for buying its products, which have proven their reliability and effectiveness over many years.

To ensure proper operation and functioning of the product and benefit from its features to the utmost, read the Installation & Operating instructions carefully and follow them step by step.

MAXIMUM Electronics Security (1984) Ltd. (hereinafter - the “Manufacturer”) hereby warrants/guarantees the products manufactured by it (hereinafter - “Product” or “Products”) against defects in production or in materials discovered during their reasonable use and servicing, in accordance with the Manufacturer’s instructions, recommendations and limitations and subject to the provisions of this Certificate of Warranty.

This Warranty is for a limited period of 12 months from the last day of the week and the year whose number is printed on the electronic card (PCB) and/or electronically encoded in one of the Product’s components.

This Warranty is limited to the repair of a defective Product, or its replacement at the Manufacturer’s option, during the Warranty period, subject to reasonable use and servicing in accordance with the Manufacturer’s instructions, recommendations and limitations.

To realize the Warranty rights, the Product must be sent to the Manufacturer securely packaged and accompanied by a document describing the problem, with insurance and freight prepaid by the sender. The Manufacturer’s products boast a high standard of reliability, proven in tens of thousands of products over many years. The percentage of problems encountered in them is virtually nil, therefore a Product must be carefully checked (according to the operating instructions) before sending it to the Manufacturer for examination and/or servicing in the Warranty framework.

In the event that the installer and/or user and/or customer and/or operator of a Product (hereinafter - the “Customer”) returned the Product to the Manufacturer on the grounds that it is defective and received in exchange from the Manufacturer a functional product, and upon examination the Manufacturer found that the returned Product was not defective - the Customer will be charged the Product’s full value as consideration for the resources invested by the Manufacturer in its examination. The Manufacturer shall in no case be liable for damage or loss (including monetary loss), whether direct, indirect, accidental, circumstantial or otherwise, entailed in the dismantling or reinstallation of the Product.

In case the Manufacturer decides to replace a returned Product that was found to be defective, the Customer hereby gives its consent to receiving - at no added cost - also a higher version of the Product.

This Warranty is not valid in the following cases: incorrect installation, installation and/or operation not in accordance with the Manufacturer’s instructions, alteration, misuse, accident, sabotage, repair or servicing by someone other than the Manufacturer. The Customer must take all necessary precautions to prevent and eliminate any discharge of static electricity or other interference that could affect the Product’s functioning.

This Warranty is exclusive and explicit and replaces any other warranty, commitment or guarantee - whether written, oral or implied.

The Manufacturer will in no case be liable toward anyone for a breach of this Certificate of Warranty or of any of its foregoing provisions.

This Certificate of Warranty may not be altered, exchanged or expanded, and the Manufacturer does not authorize anyone to do so on its behalf – including any distributor, dealer, agent, representative or employee of the Manufacturer operating by its authority or on assignment from it.

This Warranty applies to the Product only!

Any other product, accessory or adjunct used together with the Product (including batteries) will be covered solely by its exclusive warranty, if such exists.

The Manufacturer shall in no case be liable for damage or loss, whether direct, indirect, accidental, circumstantial or otherwise, caused by the proper and/or improper functioning of the Product due to use of other products, accessories or adjuncts (including batteries) together with the Product.

The Manufacturer does not claim that the Product is immune to malicious neutralization, bypass, sabotage or deception, or that it will prevent in every case death or physical and/or mental injury due to burglary, robbery, fire or the like, or that the Product will provide in all cases adequate and/or suitable warning or protection.

The Customer understands that correct installation and maintenance, in accordance with the Manufacturer's instructions, recommendations and limitations, merely reduces the risk of failure to give warning in cases such as burglary, robbery and fire, but in no way ensures or guarantees that such cases will not occur or will not result in death or physical and/or mental injury and/or damage to property.

The Manufacturer shall in no case be liable for death or physical and/or mental injury and/or damage to property and/or loss of any kind, whether direct, indirect, accidental, circumstantial or otherwise, on the grounds that the Product did not operate/function properly and/or as expected and/or according to the description in its specification or in any other documentation.

The Manufacturer shall in no case be liable for damage or loss (including death or physical and/or mental injury and/or damage to property), whether direct, indirect, accidental, circumstantial or otherwise, caused through use of and/or reliance upon the Product.

In the event that the Manufacturer is held liable, directly, indirectly, circumstantially or otherwise, for any loss or damage according to the terms of this limited Warranty or otherwise (irrespective of its cause or origin), the maximum amount of the Manufacturer's warranty and/or guarantee shall not exceed in any case the Product's price, and it shall be payable as full and final consideration, and not as a penalty, and shall constitute the entire and sole compensation by the Manufacturer.

It is hereby clarified that the Warranty under this Certificate of Warranty does not cover anything not explicitly and specifically referred to herein.

It is hereby agreed that the Customer waives in advance any claim or contention against the Manufacturer. Should the Customer and/or a person on his/her behalf nevertheless file suit against the Manufacturer, the Customer and/or that person in such case shall bear all their costs and the Manufacturer's costs arising therefrom, including lawyer's fees, and shall indemnify the Manufacturer for the full amount adjudicated against it in a decision, if any, rendered by any court or arbitrator.

Warning!

The Customer must make sure that the Product meets all his/her requirements, and he/she must comply fully with the installation and operating instructions and *inter alia* check the Product and the entire system at least once a week including under field conditions.

For various reasons (but not only those set out below), changes in environmental conditions and/or electric or electronic interference and/or malicious damage to the Product could cause the Product to function in an unforeseen manner.

The Customer must take all precautions to ensure his/her own safety and security and that of his/her property.

The Customer confirms that he/she read all the conditions of this Certificate of Warranty and he/she agrees thereto.

Installation and/or operation of the Product shall be deemed as the Customer's agreement to all the conditions of this Certificate of Warranty.