TECHNICAL MANUAL

TRIAL485V

Outdoor double technology detector with vertical lens equipped with under-crawl and anti-masking protection with RS485 interface

090071111

IT08020000001624

IMQ-SISTEMI DI SICUREZZA

EL.MO. SPA

FOREWORD

FOR INSTALLERS

Please follow carefully the specifications about electric and security systems realization further to the manufacturer's prescriptions indicated in the manual provided.
Provide the user the necessary indication for use and system's limitations, specifying that there exist precise specifications and different safety performance levels that should be proportioned to the user needs. Have the user read carefully the instructions provided in this document.

FOR USERS

Carefully check the system functionality at regular intervals making sure all enabling and disabling operations were made correctly.
Have skilled personnel make the periodic system's maintenance. Contact the installer to verify correct system operation in case its conditions have changed (e.g.: variations in the areas to protect due to extension, change of the access modes, etc.)

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This device has been designed, assembled and tested with the maximum care, adopting control procedures in accordance with the laws in force. The full correspondence to the functional characteristics is given exclusively when it is used for the purpose it was projected for, which is as follows:

Outdoor double technology detector with vertical lens equipped with under-crawl and anti-masking protection with RS485 interface

Any use other than the one mentioned above has not been forecasted and therefore it is not possible to guarantee the correct functioning of the device. Similarly, any other use of this technical manual other than the one it has been compiled for - that is: to illustrate the devices technical features and operating mode - is expressly prohibited.
The manufacturing process is carefully controlled in order to prevent defaults and bad functioning. Nevertheless, an extremely low percentage of the components used is subjected to faults just as any other electronic or mechanic product.
As this item is meant to protect both property and people, we invite the user to proportion the level of protection that the system offers to the actual risk (also taking into account the possibility that the system was operated in a degraded manner because of faults and the like), as well reminding that there are precise laws for the design and assemblage of the systems destinated to these kind of applications.

The system's operator is hereby advised to see regularly to the periodic maintenance of the system, at least in accordance with the provisions of current legislation, as well as to carry out checks on the correct running of said system on as regular a basis as the risk involved requires, with particular reference to the control unit, sensors, sounders, dialler(s) and any other device connected. The user must let the installer know how well the system seems to be operating, based on the results of periodic checks, without delay.

Design, installation and servicing of systems which include this product, should be made by skilled staff with the necessary knowledge to operate in safe conditions in order to prevent accidents. These systems' installation must be made in accordance with the laws in force. Some equipment's inner parts are connected to electric main and therefore electrocution may occur if servicing was made before switching off the main and emergency power. Some products incorporate rechargeable or non rechargeable batteries as emergency power supply. Their wrong connection may damage the product, properties and the operator's safety (burst and fire).

EU DECLARATION OF CONFORMITY

Hereby, EL.MO. Spa declares that the radio equipment TRIAL485V is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following Internet address: elmospa.com – registration is quick and easy.

DISPOSAL INSTRUCTIONS - USER INFORMATIONS

According to Directive 2012/19/EU on the Waste of Electric and Electronic Equipment (WEEE), it is here specified that this Electrical-Electromechanic Device started to be commercialized after 13th August 2005, and it shall be disposed of separately from ordinary waste products.

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1. GENERALS

TRIAL485V belongs to the family of high performance detectors that are able to accurate analysis of the received signal, using sophisticated algorithms. The detector is designed for outdoor and indoor installations.

The TRIAL485V offers a digital PIR sensor to obtain a high detection precision and great noise immunity and the RS485 interface for the complete management via software.

The control and analysis process is programmed, with proper selections, to generate the alarm with "AND" operation, generated when the two detection systems (MW and IR) are in alarm, or "OR" operation when just the alarm from a single detection section of the TRIAL485V.

The MW section is equipped with DRO device and low-absorption pulse-function planar antenna and anti-masking device while the IR section is equipped with FRESNEL lens and lower under-crawl lens.
It is available the version with different frequency for side mounting.

The IR section is equipped with a sophisticated monitoring device for the environment control and its thermal perturbations; the section offers a digital PIR high-immunity sensor to obtain the optimal response to the signal caused by the people motion, to reject all the small heating phenomena that can lead to false alarms; the PIR is protected by a silicon filter for the protection by the with light, the optical unit is sealed to the reduction of false alarms for insects entry.

The detector is protected by two separate circuits for the detection of masking attempts and blindness, the anti-blinding device is active type, both circuits can be activated via software.

The masked and/or blinded detector is proper signalled with the slow flashing of blue LED (masking) and green (blinding), while the relay output is active during masking/blinding of the detector; the restart of the operation occurs at the next motion detection of the technologies. The detector generates an alarm also if is disoriented thanks to a high sensitivity accelerometer sensor in the circuit with operation on two axis.

The detector is compatible with the control unit that feature ULTRABUS interface.

Through the TRIAL485 serial interface, is possible to manage the detector via software (e.g. sensitivity parameters, integration, environmental noise analysis, temperature and the generated event log). The control software can be identified only with **BrowserOne v.2.7.18** or higher, using the specific module for the control unit in use.

The particular shape of the TRIAL485 housing simplifies the installation also with 6° angled bracket (supplied), for outdoor installation is supplied a protective sunshield. The tilt adjustment is facilitated adding a joint also with 90° joint. The joint can be ordered with **SNDTRIAL** code. **The TRIAL485 detector is not equipped with interchangeable lens.**

TRIAL485V is IMQ - Security Systems certified.

2. FEATURES

2.1 General features

- Sturdy plastic housing for indoor/outdoor installation. It design is simple and elegant.
- Detector managed by the microprocessor.
- IR section with digital PIR sensor high sensitivity and with silicon filter for white light protection.
- Sealed lens to reduce false alarms due to insects entry.
- The detector can be managed via software trough RS485 serial interface.
- Real-time monitoring of the operating status of the detector and the environmental temperature. Graphics storing of the last generated alarm.
- Parameters can be set via software: sensitivity, integration, AND/OR function, walk test, enabling of the functional LEDs, masking, blinding, disorientation, MW section exclusion with disconnected system.
- Advanced parameter for the operation such as the thermal compensation of the features of the IR section for the detector operation also in critical situations.
- Disorientation detection with accelerometer sensor on two axes always active and consequent generation of Tamper alarm.
- Ability to save as JPG of the programming window or only waveforms.
- Waveforms registrations from the browser up to 4 hours.
- Sophisticated calculation algorithm used by the environmental monitoring circuit with microprocessor conversion on IR stage.
- MW section with DRO device and planar antenna.
- 3D function.
- Anti-blinding active circuit in the IR section with RXTX IR encoded and anti-masking circuit in the MW section.
- Fresnell lens and lower lens with under-crawl device ultrasonically welded and non-replaceable.
- Protections against noise applied to the powered terminals and serial line.
- Detection function of the perceived noise from the IR and MW section with vertical bar viewing, oscilloscope viewing with zoom and thresholds setting.
- For the TRIAL485V detector is available a SNDTRIAL optional accessory that allows to compose a wall or 90° swivel mounting

in order to accurately orient its position in relation to the area to be protected.

- The TRIAL485V detector is equipped with protection sunshield for outdoor installation and 6° angled bracket for 2.1 meters installations.

- On request can be order the TRIAL485V version on differentiated frequency
For alphanumeric codes corrected please consult the chapter "General installation recommendations" on page. 6.

- It is also available the TRIAL485H model equipped with horizontal curtain lens already welded.

2.2 Electrical features

Model:	**TRIAL485V**
Performance level:	II° with or without swivel-mounted
IMQ certified:	**EN50131-2-4:** grade 3.
Environmental class:	4
Protection class:	**IP55**
Power supply:	12 V ⎓ (from 7,5 to 15 V).
Admitted ripple:	200 mVpp.
Detector consumption @12V:	
idle:	19 mA.
in alarm:	24 mA.
in stand-by, excl. MW:	18 mA.
Functions programming:	via software.
Address setting:	through dipswitch
Timings:	
Alarm or for disorientation:	5s
Stand by at power on:	20s
Alarm waiting AND function:	10s

Views:	MW section operation, IR section operation, alarm status, faults, disorientation, masking/blinding.
Leds exclusion:	via software.
Adjustments:	via software.
Alarm and tampering:	generated from the detector and sent via RS485.
Tamper:	protection against opening and tear of the fixing internal base, this function can be excluded with a jumper.
IR gain stage:	optimized with temperature and managed via software.
Operating temperature:	-10 / +55 °C.
Humidity:	93% Ur.
Dimensions, weight:	H 167 - W 95 - D 75 mm only detector body, 270 g without swivel accessories.
Parts supplied:	screws, bolts, 6° inclined plate, sunshield, technical manual.
Options:	**SNDTRIAL joint can be composed also at 90°.**

MW SECTION

Adjustments:	range adjustable via software.
Sensitivity:	adjustable via software.
Filtro antidisturbo:	neon lamps -21 dB, power supply -65 dB.
Frequenza TX:	10,525 GHz for standard version. 9,9 GHz for version at differentiated frequency.
Emitted power:	13 dBm E.I.R.P.
Emitted sporious:	<-30 dBm.
Emitted signal:	pulsed.
Range:	from 3 to 15m +/-20% adjustable via software in 4 step.
Coverage area:	95° horizontal, 60° vertical
Timings:	single alarm with confirmation pending of the IR sections. AND and OR operation can be set via software.

IR SECTION

Lens type:	VB 1.2 GIV1 lens Separated lens for under-crawl.
No. sensitivity zone:	1 zone on vertical floor 3 under-crawl zones on 1 floor.
Coverage area:	wall protection IR opening at 5,6°.
Range:	15 m fixing at standard height of 2,10 m, the coverages may be different according to the adopted solutions for mounting with tilted bracket and/or SNDTRIAL, see the manual.
Sensitivity:	adjustable via software.
Timings:	Single alarm with confirmation waiting from the MW section. AND and OR operation can be set via software.

3. DETECTOR VIEW

Exploded view of the detector with all accessories.

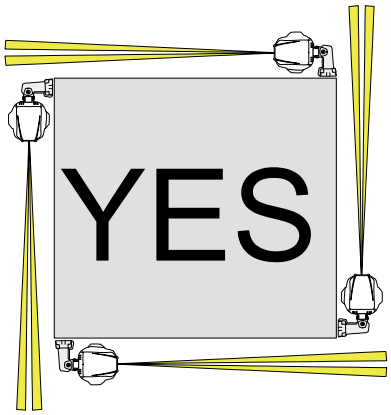
Note: the joints are supplied with the **SNDTRIAL** product and can be mounted according to the different needs. They are equipped with special rubber washers with clutch function. For the assembly see the specific data sheet.

4. INSTALLATION

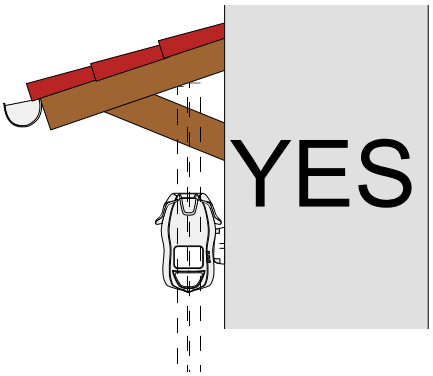
4.1 General installations recommendations

- During the installation and during board handling, don't touch the PIR sensor with your fingers.
- In case of indoor installation with pointing towards the windows or plastic curtains is required to make sure that the adjustment of MW range does not exceed (if necessary put the MW range to the minimum).
- In case of installation of two close detector, it is necessary to choose the second detector with differentiated frequency as follows:
  TRIAL485V standard RCRDTMP023#00 and TRIAL485V with differentiated frequency RCRDTMP027#00.
- Do not mount the sensor with direct or close pointing. It is necessary to separate them by at least 5m.
- Do not install near any metal oscillating shutters, vibrating metal walls (e.g. refrigeration units).
- For outdoor installations see the image with allowed and not allowed installations,.

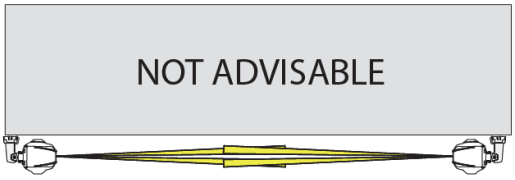
Perimeter with not over-lapping coverage



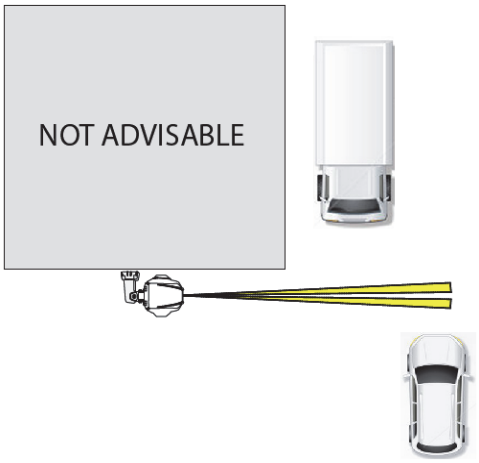
Outdoor protected by a porch or terrace (recommended)



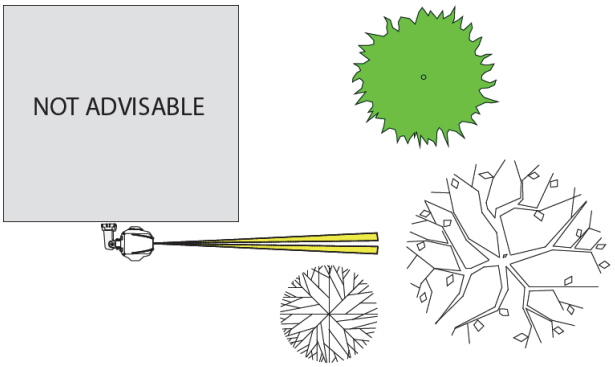
Side with coverage completely overlapping.



Pointing toward the outside areas affected by the passage of car or truck also with car-truck distances >> 15m.

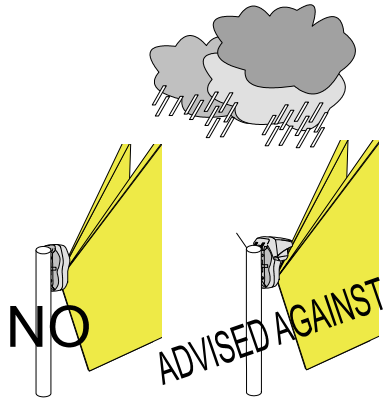


External pointing toward trees or shrubs, the minimum distance must be > 15m.

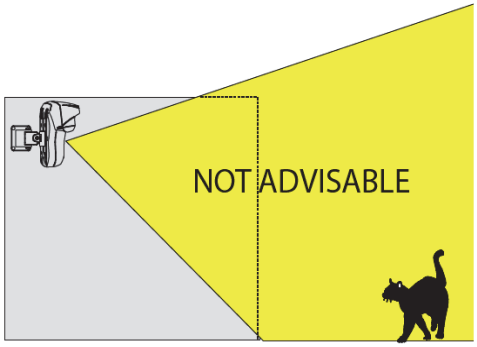


Outdoor installation on pole with or without protection.

Important note: the installation is recommended because the bad weather, heavy rain, hail etc. can cause false alarms.



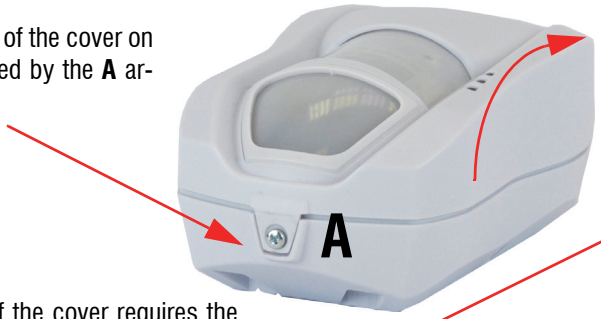
Installation with standard lens with animals presence.



4.2 Opening and reclosing operations of the housing

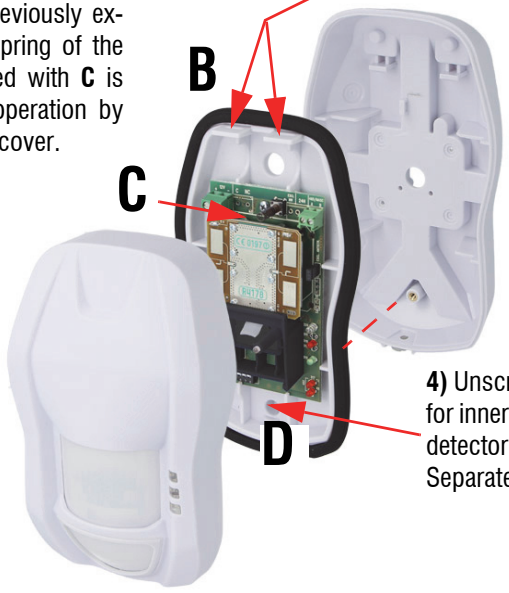
The installer must operate without electrostatic charges already at the housing opening, the electronic board of the detector can be damaged by electrostatic discharge. The precautions should be observed during the installation phase and during maintenance.

1) Unscrew the fixing screw of the cover on the housing bottom, indicated by the **A** arrow.



2) Separate the front cover by turning it from below with the fulcrum at the top of the detector by releasing the latches indicated by **B** arrow in the image below.

3) The reclosing operation of the cover requires the inverse performing of the operations previously exposed. Pay attention that the closing spring of the Tamper microswitch protection indicated with **C** is properly located. Conclude the fixing operation by screwing the **A** screw to the base of the cover.

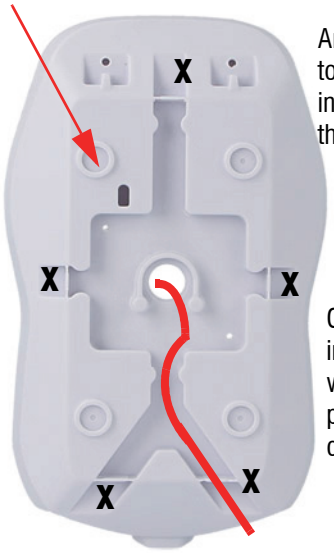


4) Unscrew the screw indicated by the **D** arrow for inner base fixing with seal perimeter and the detector circuit. Disconnect the internal base. Separate the fixing base.

4.3 Cables routing

Internal viewing and directions to the cables routing.

Arrangements for drilling and support pin for wall mounting

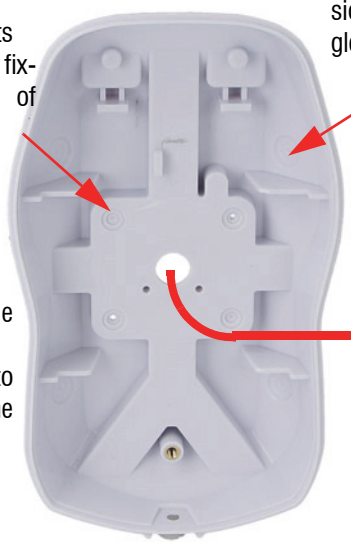


Rear view of the fixing base with facilitators paths for cables.

The cables must be introduced through the hole indicated with upward direction.

Arrangements to insert the fixing screws of the joint

Cut the edge indicated with **X** to pass with the cable.



Internal view of the fixing base.

Arrangements for side holes for angle fixing.

Fixing screw of the circuit

Example of cable entry.

Lower hook of the circuit

Note: to proceed to the wiring, don't remove the board from the base. In case of necessity pay attention at the spring of the internal against-tear system.

4.4 6° tilt base

The use of the 6° base inclined is required for the detector mounting at 2.1m height for wall and corner. The base must be fixed to the wall or corner before passing the cable to the proper length, then it will also pass on the basis that you will have to fix it with the four provided screws.

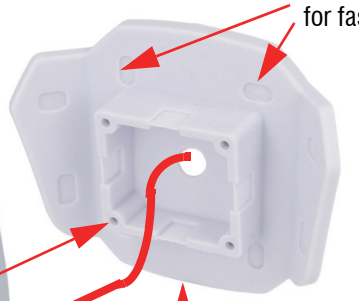
ATTENTION

Mounting bracket to 6° down than the photos you will get an incorrect assembly protected detector moved upwards.

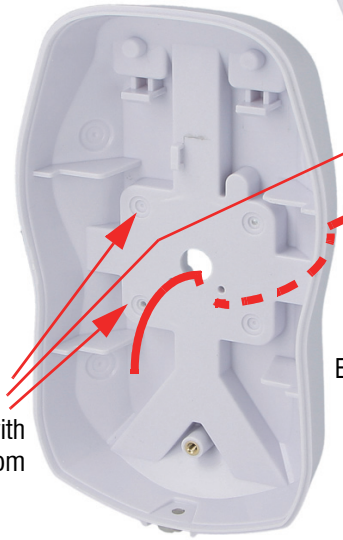
YES

NO

Arrangements for the upper and lower holes for fastening corner



Lower side

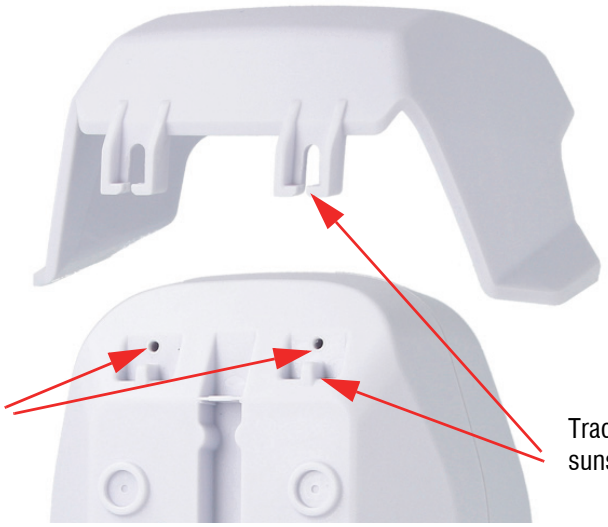


Example of cable input

Fix the angled base with four screws inserted from the inside of the base.

4.5 Sunshield installation

Example to fix the protection sunshield



Holes to insert the lock screws of the sunshield in order to further strengthen the fixing.
Provided Inox screws.

Note: the sunshield can also be hooked after the detector fixing to the support using the indicated track that in any case will have a good stability even without the rear screws.

Track to facilitate the sunshield attachment

4.6 Optional SNDTRIAL joint

The details of the **SNDTRIAL** joint are supplied with a data sheet of the various installation modes for all possible combinations.

Summary of the installation types of the joint according to the fixing heights and the type of used detector.

Installations options:

A. Direct fixing at 1m TRIAL485V (without joint and without 6° bracket).

B. Direct fixing at 2.1m with 6° bracket for TRIAL485V (without joint).

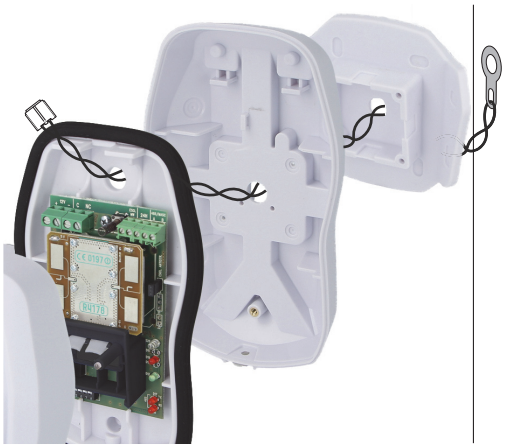
Possible installations with **SNDTRIAL** optional joint:

- Fixing with 90° joint for TRIAL485V at any height up to 3m max 90° rotation (right or left according to the bracket) and pan/tilt up to +/- 45°.

4.7 Protection against removal from the mounting surface

Compliance with EN 50131 regulation grade 3 requires that the device is protected against removal from the mounting surface. Install the proper kit for protection against removal before fixing the tilted plate or the joint to the wall.
Use KSAS1032 kit (white) in case of tilted plate use, KSAS1055 kit (red) in case of joint use.

- fix a S4 dowel (supplied) to the wall
- fix the eyelet to the dowel



KSAS1032 kit, white

KSAS1055 kit, red

If you are using the tilted plate:

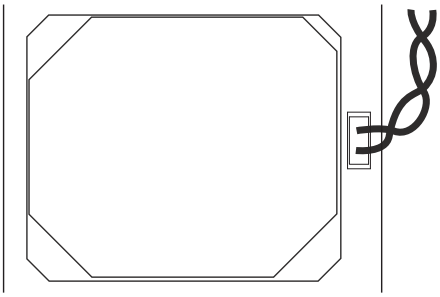
- drill a hole (diameter: 6,5 mm) on the centre of the tilted plate
- feed the cable in the hole
- fix the plate to the surface

If you are using the joint:

- feed the cable in the joint, as indicated in picture below
- fix the joint to the surface, covering the eyelet

Once the plate or the joint have been installed:

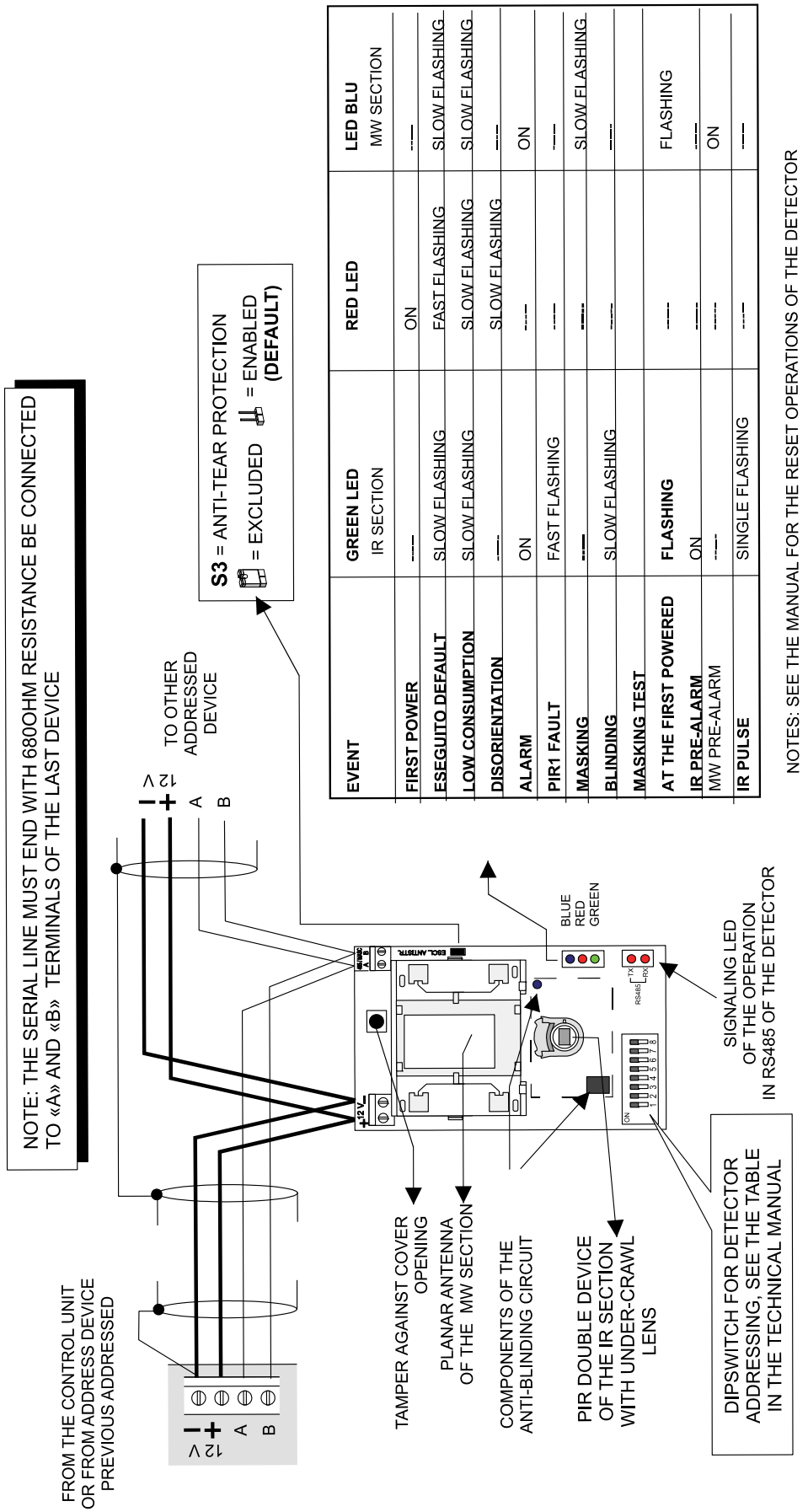
- feed the cable through the hole on device housing back
- fix the housing back to the plate or to the joint
- feed the cable through the upper hole on device inner base
- lean the inner base on the back, hooking it to the tabs



- remove ESCL. ANTISTR. jumper on device board
- connect the cable connector to the jumper

5. ELECTRICAL CONNECTIONS

View of the detector board.



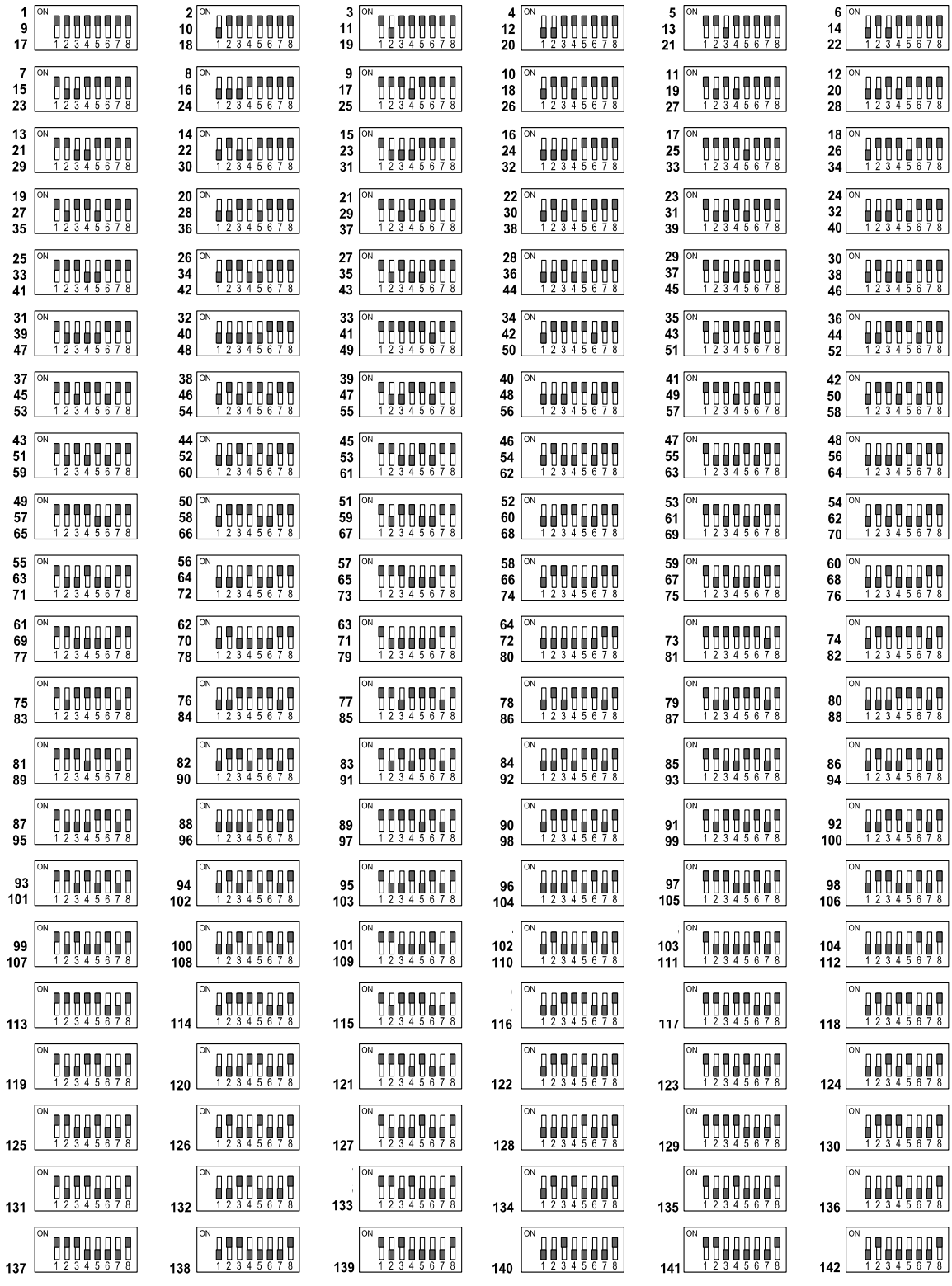
EVENT	GREEN LED IR SECTION	RED LED	LED BLU MW SECTION
FIRST POWER	----	ON	----
ESEGUITO DEFAULT	SLOW FLASHING	FAST FLASHING	SLOW FLASHING
LOW CONSUMPTION	SLOW FLASHING	SLOW FLASHING	SLOW FLASHING
DISORIENTATION	----	SLOW FLASHING	----
ALARM	ON	----	ON
PIR1 FAULT	FAST FLASHING	----	----
MASKING	----	----	SLOW FLASHING
BLINDING	SLOW FLASHING	----	----
MASKING TEST			
AT THE FIRST POWERED	FLASHING	----	FLASHING
IR PRE-ALARM	ON	----	----
MW PRE-ALARM	----	----	ON
IR PULSE	SINGLE FLASHING	----	----

6. ADDRESS SETTINGS

Table 1.

Note: the number of the first row indicates the VIDOMO/PREGIO/PROXIMA encoding, the second row indicates the ETR100MG2 encoding, ETR100MG2, in the third row on the side indicates the ETR128-256-512 G2 and TITANIA encoding.

DO NOT EXCEED THE MAXIMUM MANAGED BY THE CONTROL UNIT

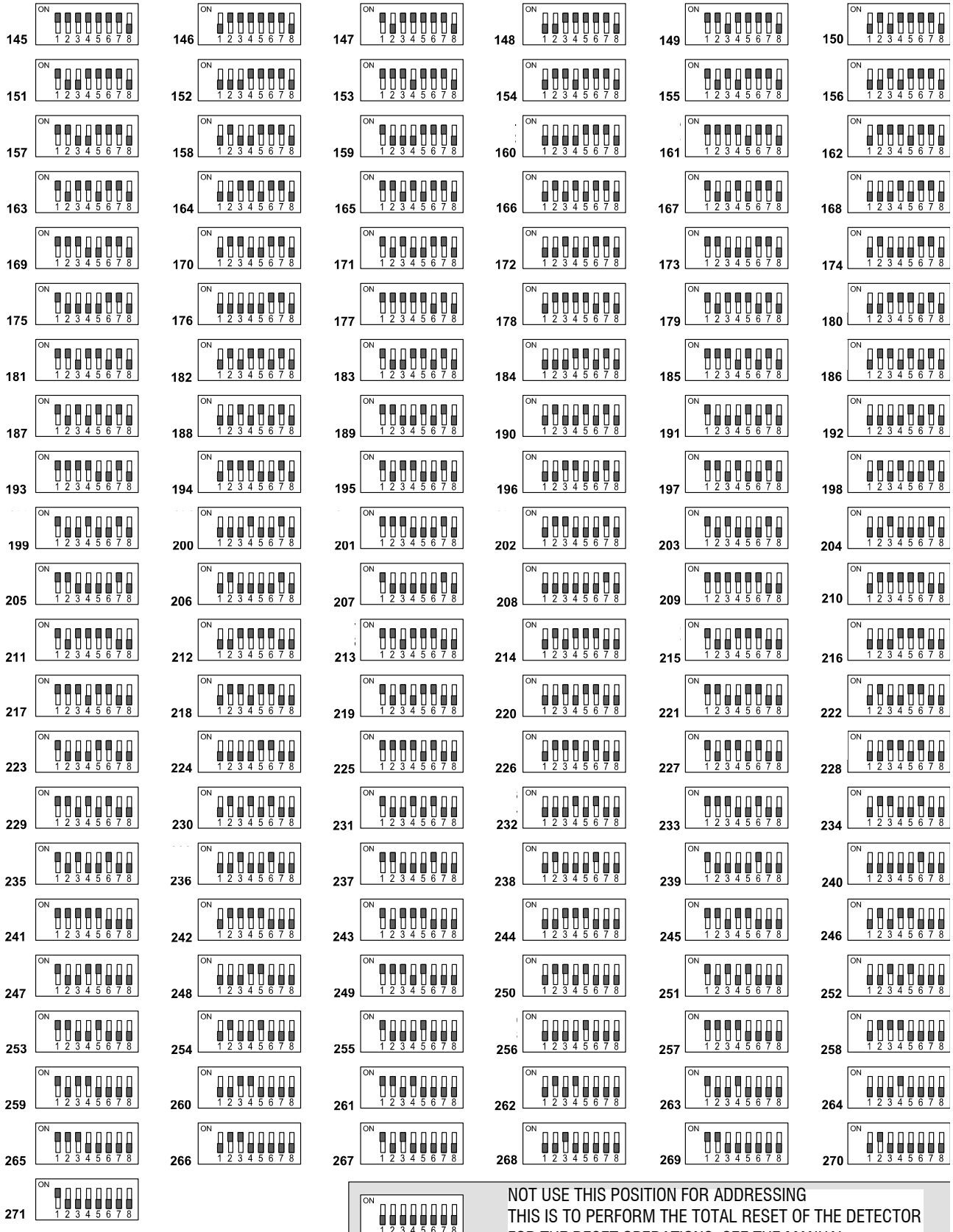


NOT USE THIS POSITION FOR ADDRESSING
THIS IS TO PERFORM THE TOTAL RESET OF THE DETECTOR
FOR THE RESET OPERATIONS, SEE THE MANUAL

Table 2

Note: the number in the first row indicates the ETR128-256-512 G2 and TITANIA encoding.

DO NOT EXCEED THE MAXIMUM MANAGED BY THE CONTROL UNIT.



NOT USE THIS POSITION FOR ADDRESSING
THIS IS TO PERFORM THE TOTAL RESET OF THE DETECTOR
FOR THE RESET OPERATIONS, SEE THE MANUAL

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6.1 Reset operation of the detector

The detector saves the received settings via serial line from the configuration software, to quickly return the detector to its factory settings (without the software connection) proceed as follows:

- Remove power.
- Move all the selectors of the dipswitch to OFF. 

- Power the detector and check the green and blue LED that flashing slowly while the red LED flashes quickly.
- Disconnect the power supply after least 20s.
- Set a valid address for the operation with the control unit which must be disconnected.
- Power the detector.
- Proceed to his recognition via software and programming.

Note: removing power, the alarm memory will be lost.

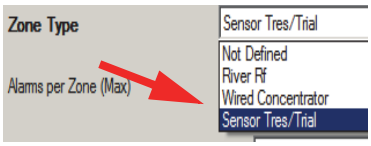
7. SOFTWARE PROGRAMMING

ATTENTION: the detector can be programmed only using the module of the compatible control unit within the BrowserOne v.2.7.18 software and higher.

Use the proper module according to the control unit in use.

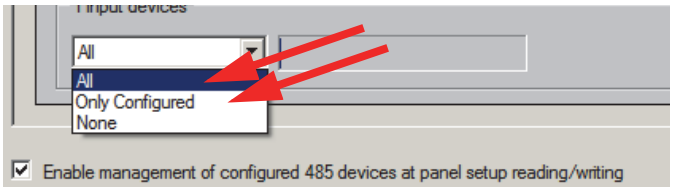
To detect the sensor, you must:

- Connect to the control unit.

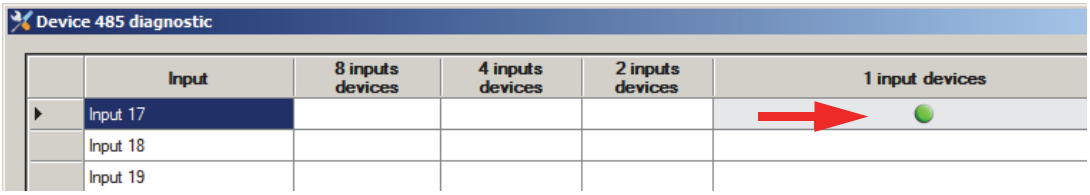
- Select it in the list of connection types for input 

and connect it.

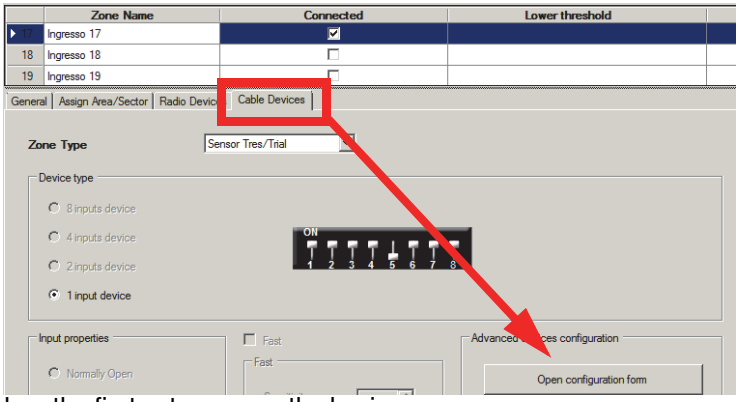
- From the actions menu, select "RS485 device management" and in the following menu "All" or the "Only configured" to an input



- Click on the "Read" button and check the effective recognition at the end of the action.



- In the inputs menu select "Cable Devices" label and click the "Open configuration form" button in the "Advanced Device configuration".

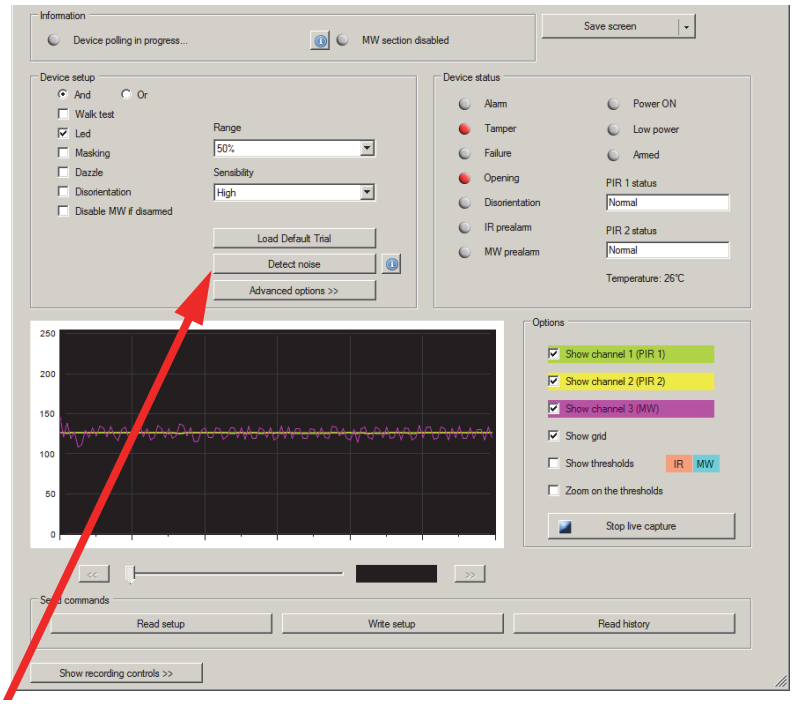


ONLY now will be displayed on the first setup menu, the basic one:

In the top bar will show the detector model and the firmware version.

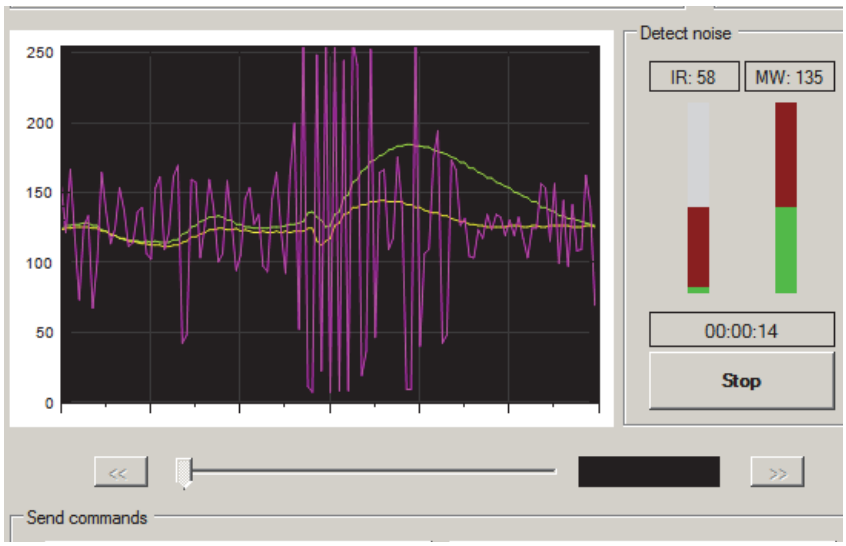
In this menu you can select:
The range, with preset values 50% (default), 75% and 100% of the range indicated in the detector's specification.

The sensitivity, with preset integration values:
ALTA (default)= 4 MW settings and 2 IR setting (from each IR).
BASSA=8 MW settings and 3 IR settings (from each IR).



Environmental noise function

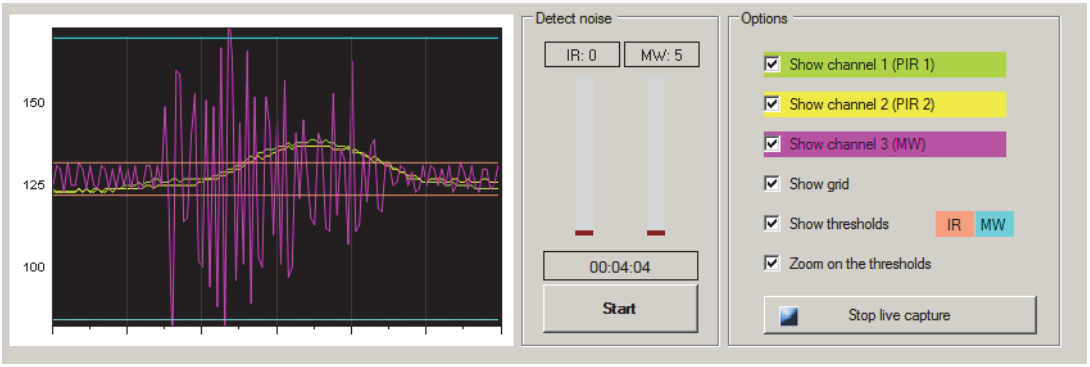
Clicking on the indicated button, opens a screen on the right of the oscillographic window that allows to detect for some time (at the discretion of the installer) the environmental noise for MW and IR and provide a result depending on the set thresholds. To start the detection click on the "Start" button, click on the "Stop" button to stop.
The image on side is an example of oscilloscope display, with vertical bars and the detected values of the IR and MW sections:



Oscillographic function

The oscillographic function is a key point of the detector management software because it allows to effectively view the environmental noise and the motion in the protected area by the detector.
The display options allow to select the waveforms and it is possible also set graphically the IR and MW warning thresholds available in the "Advanced Options".

The oscillographic function is also available during the waveforms recording.

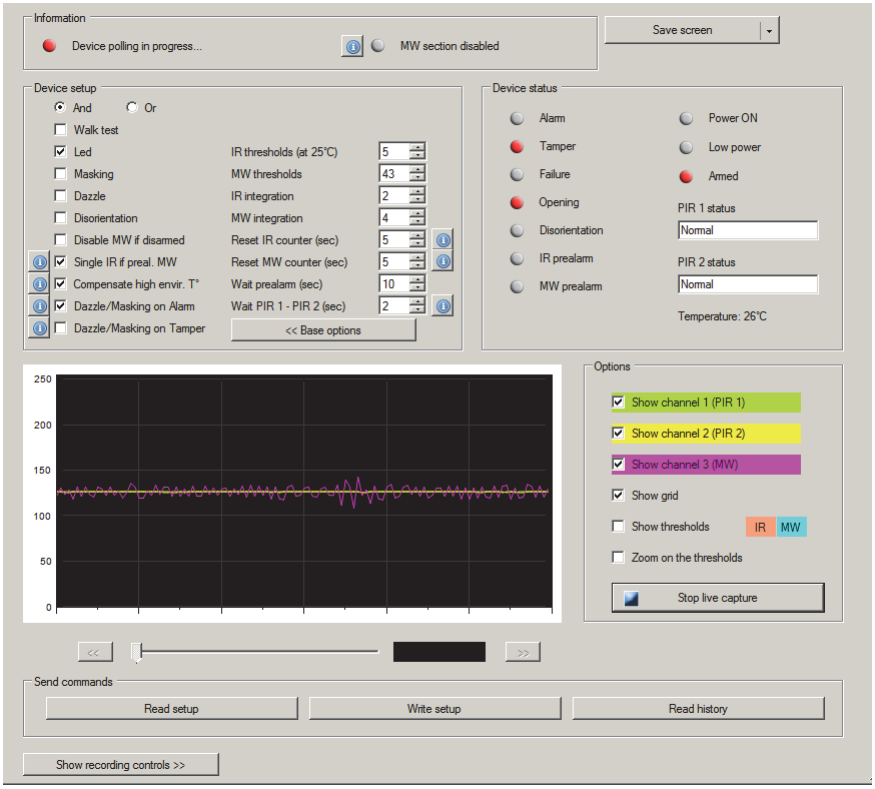


The "Stop live capture" button blocks the graphic flow from right to left.

By clicking on "Advanced Options" you will see the second menu.

"**Disabled MW if disarmed**" the function to disable the MW section when all the belonging sectors are off; in this case just using the pre-alarm PIR sections to generate the general alarm.

Note: in this case the anti-masking is not enable, remains active only the anti-blinding. The masking will be again operating at the insertion of at least one of the sectors associated with the sensor.

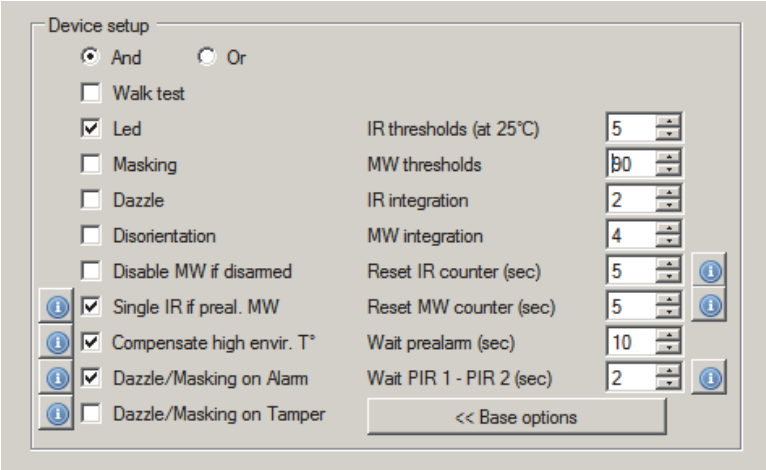


Among the advanced options, are to be reported:

- **Single IR after MW pre-alarm** (default=enabled): it allows to alarm the detector at the first IR pulse (from both PIR) independently from the "IR integration" settings after the first MW pre-alarm.

If before there is not the warning from the MW section, the counting of IR integration follows what is set.

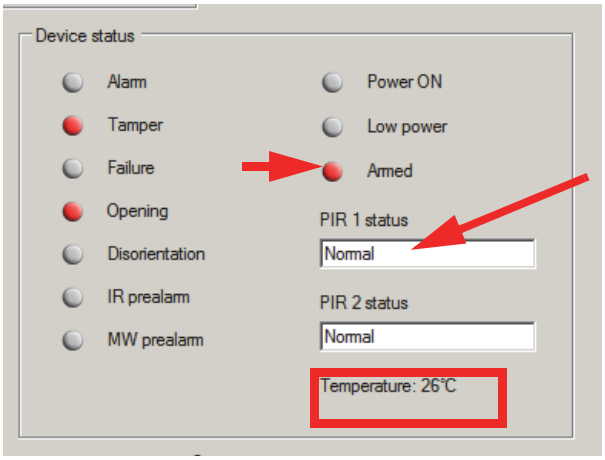
- **High temperature compensation selected by deafult:** in case of high environmental temperatures (>33°) it is possible to implement the IR section sensitivity.



7.1 Operating status

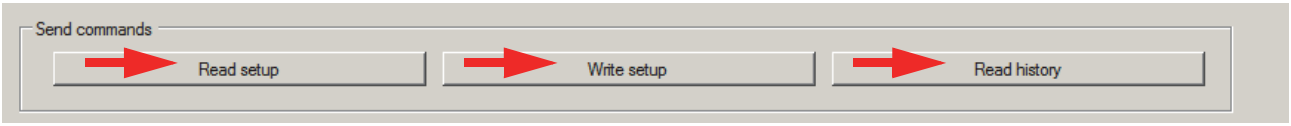
The operating status of the detector is viewing from the front LED but it is possible to analyse it only with the software, the summary screen is on the right of the basic and advanced options screens.

The display of "Armed" corresponding to the sectors status associated with the detectors, the PIR sensor status and the indication of the perceived temperature.



7.2 Commands sending

In the configuration window there are three buttons to send the following commands:



These commands are also available during waveform recording as show below.

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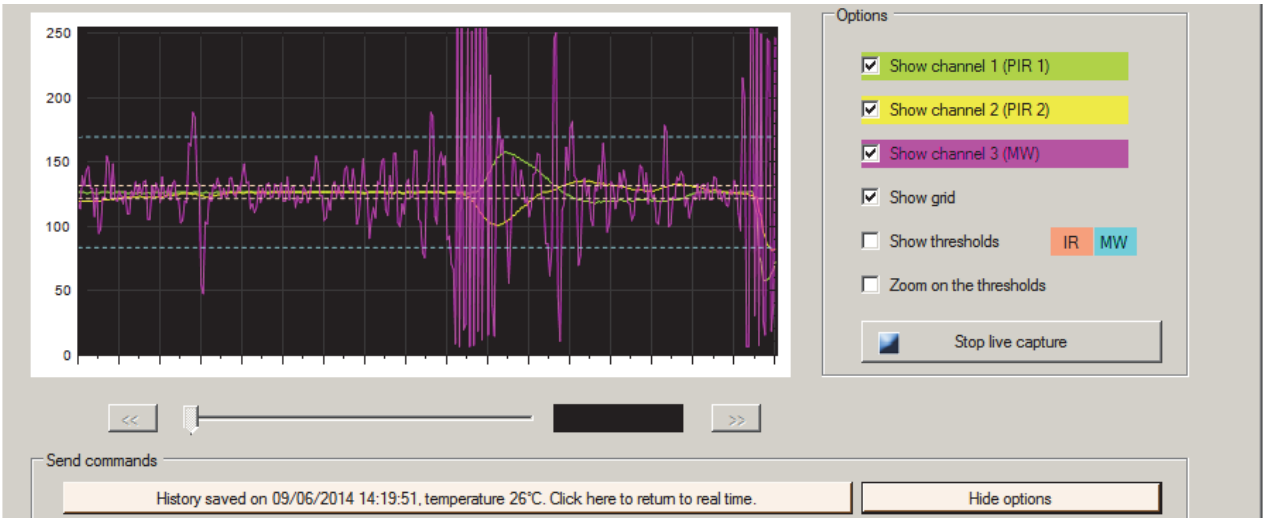
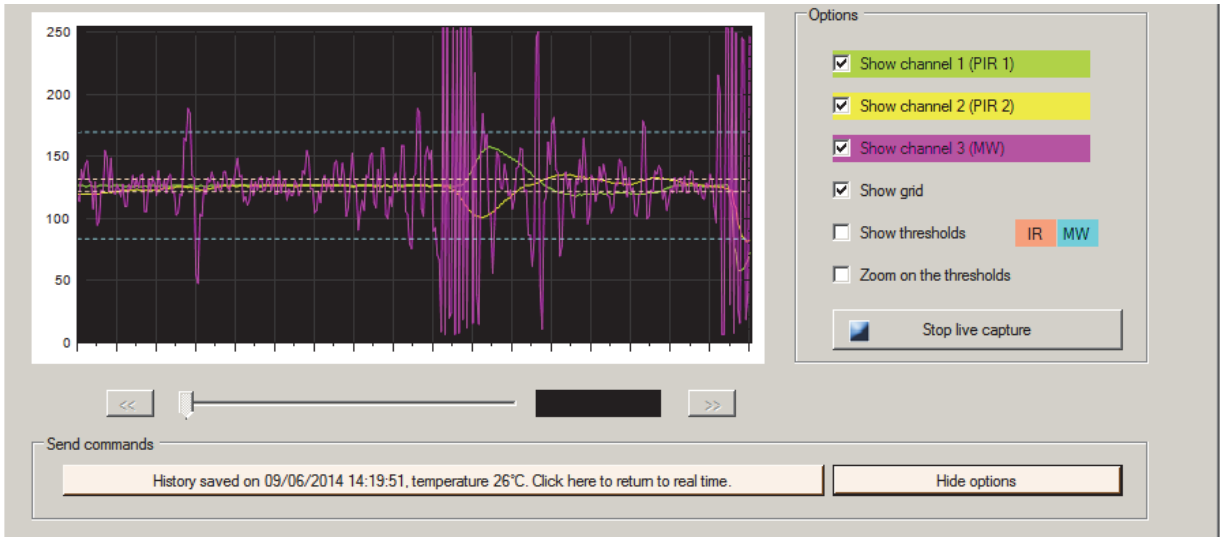
elmospa.com

7.3 Alarm memory

The TRIAL485V detector can locally store the waveforms corresponding to the last generated alarm.
The alarm memory of the detector can be read and displayed exclusively with the software.



Note: the control unit can not store the alarm from the detector with the details about the waveform, in case of power failure the alarm stored is lost. By clicking on the "Show options" displays the same image with the possibility to select the options.



The detector alarm is stored only if at least one of the sectors, belonging to the input of the detector is inserted, in this case are stored:

- The waveforms of the first received alarm after the insertion.
- The data and time of the alarm.
- The IR and MW alarm thresholds of the alarm, see note.
- The environmental temperature of the alarm, the shown value is indicative.

Note: not change the configuration before the alarm memory reading of a detector: considering that the threshold of alarm memory always maintained and displayed separately (dashed lines). If the configuration is changed before the alarm memory reading, the parameters in the setup section will be the last inserted.

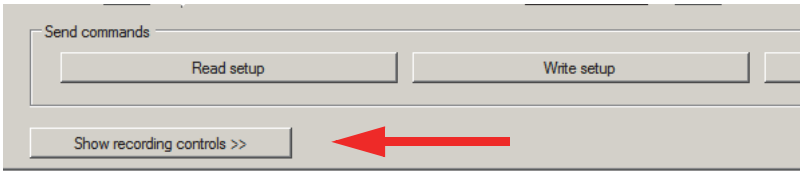
Should also be noted that:

- The alarms generated after the first, within the same insertion cycle are not stored.
- In case of control unit reset, the stored alarm is maintained.
- In case of insertion cycle with alarm followed by deactivation and reactivation with another alarm, the storage will be always referred to the last generated alarm.
- With an alarm storage, the alarm is maintained until the next alarm.
- In case of any power failure, the alarm memory is lost.

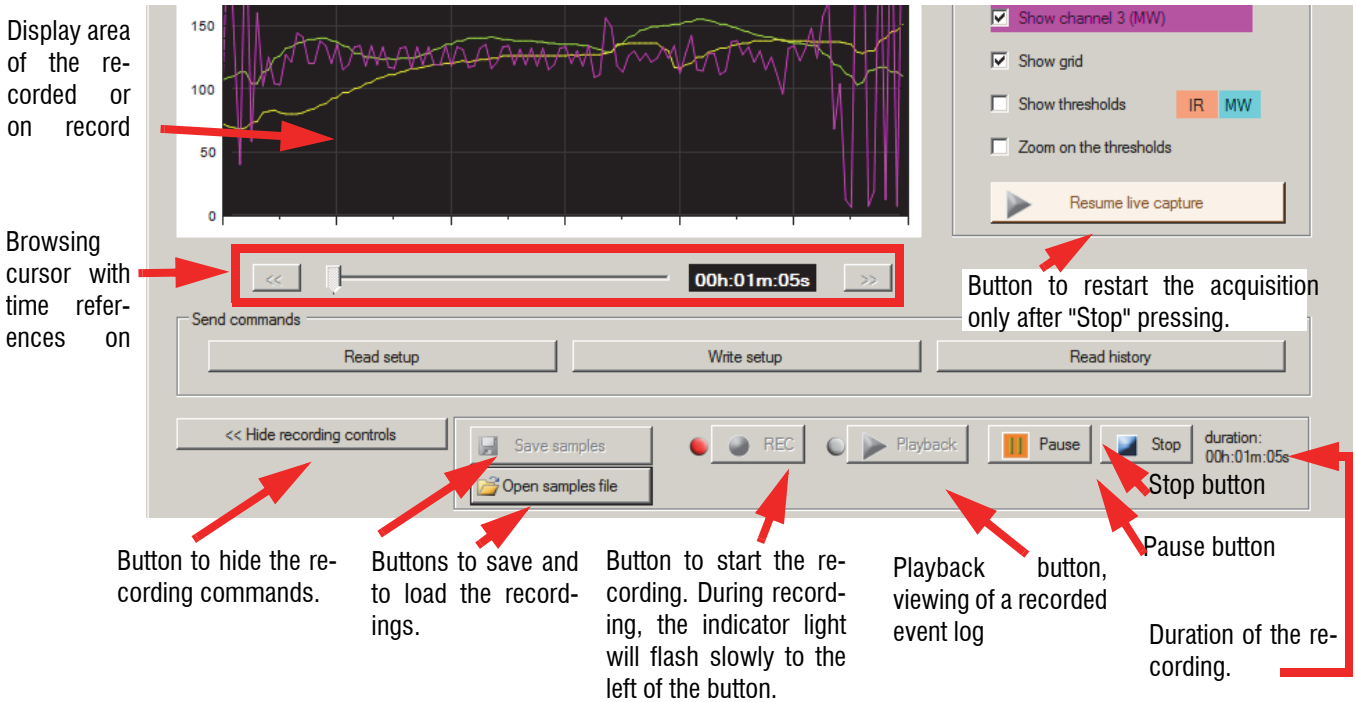
WARNING: more information can be obtained from the manual programming of the compatible control unit.

7.4 Waveforms recording function

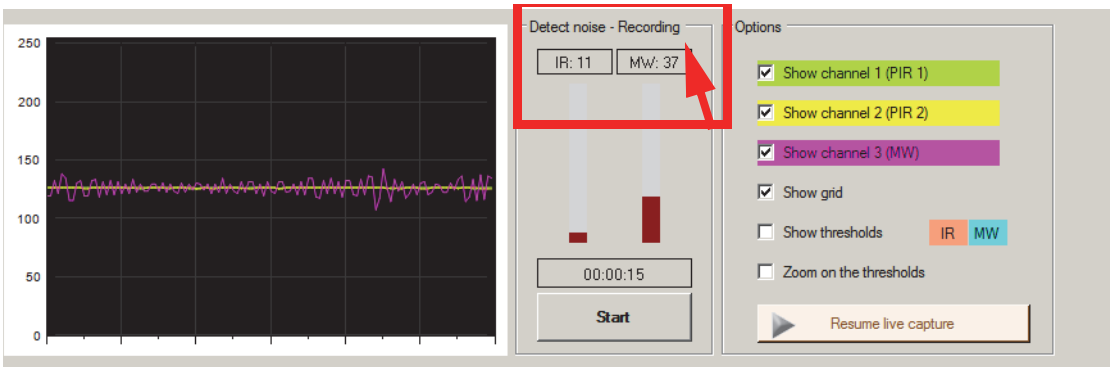
This function is present only from the BrowserOne v.2.5.5 and higher version. It allows to record the detector waveforms for up to 4 hours. During the recording, the technical can move inside the area protected by the detector and the return to the PC stopping the recording, to save and to see it more easily in order to evaluate the behaviour in operation.
The software behaves as a modern graphic recorder provides classic management buttons and shown to the left of a navigation bar.
The window with the function commands is not visible by default, if necessary you will have to click on the button in the bottom of the screen as indicated by the arrow.



The main commands are:



During waveform recording it is possible to write a new detector setup, read the existing configuration in the detector, read any alarm memory.
During recording, it is also possible to perform the noise test regardless of the situations of Live display, playback or REC. In the case of test noise starting it is highlighted contemporaneity with other activities by the inscription in the corresponding area shown.



8. OPERATION

8.1 Environmental monitoring

In the IR section of the TRIAL485V is present a sophisticated device of environmental monitoring (3D) with microprocessor analysis of the signals from the PIR sensor. This circuit performs its function for a precise analysis of the motion and a drastic reduction of false alarms.

8.2 MW section exclusion

The TRIAL485V detector can be programmed by software to exclude the MW section and to reduce the consumption, if the control unit that manage it is disconnected; the MW section is not active and works only the detection with PIR sensor, is performed automatic switching to **OR** operation.
If the control unit that manage it is connected, the operation of the MW section resumes with the consequent **AND** operation or in any case according to the setting in programming.

Note: if the MW section is excluded via software and if the detector sectors are disconnected, the anti-masking function will be disabled and only the anti-blinding function will remain active.
The masking will be again in operation at the insertion of at least one of the sectors associated with the detector.

8.3 AND operation

The TRIAL485V detector can be programmed by software for the AND operation. In this mode is generated the alarm when both technologies (IR and MW) give alarm signal within a maximum time set by software, default 10 s; if this does not happen the technology that reported the alarm, after this time is restored.

8.4 OR operation

The TRIAL485V detector can be programmed by software to obtain the OR operation. In this mode is generated the alarm when one of the two technologies (PIR or MW) provides an alarm signaling for the motion in the controlled area.

8.5 Anti-masking/Anti-blinding function

TRIAL485V is equipped with an anti-masking and anti-blinding device, the anti-masking section is enabled via software only if the detector is in operation and with AND operation, and if the EXCL MW is not active.

Nota: if the EXCL MW function is active at least one of the sectors associated with the detector must be inserted.
The masking status will be highlighted by the slow flashing of the blue LED of the MW section.
The blinding status will be highlighted by the slow flashing of the green LED of the IR section.

The return to the normal operation conditions occur at the first motion confirmed by the technologies or at the cause removal.

Nota: the anti-blinding section detect the darkening attempt with a reflective body near the lens.
The anti-masking section detects an interference body near the detector.

Note: the viewing control of the activation status of the "anti-masking" function, if activated via software, occurs only during the stabilization phase at the detector powered (red LED fixed ON).
In this phase, if a person moves close to the sensor, the two LEDs flash blue and green.

Note: with the v.1.6 firmware, the event generated by the Masking/Fault circuit is sent for default to the compatible control unit such as **"Zone fault xxx" + "Zone alarm xxx"**, if required can be programmed via software **"Device setup"** to send only the **"Zone fault xxx"** or **"Zone fault xxx + Zone Tamper xxx".** To take advantage of this possibility it is necessary to use the BrowserOne v.2.5.5 or higher and module of compatible control units VIDOMO v.5.0.10 or higher ETRG2 v.1.1.9 or higher. With previous versions of the software, the echo function can not be disabled.

For more information, see "Installation recommendations" chapter.

Warmings
- If the TRIAL485V is mounted close to people motion, it is recommended to disable the software from the "Anti-masking/blinding" function.
- If the distance is less than 20cm is recommended to disable via software the "anti-masking/blinding" function.

8.6 3D function

3D function is the combined of the integration circuits during the detected motion by the two PIR sensors and by the MW section, this causes an alarm.

8.7 Against disorientation

TRIAL485V is equipped with protection circuits always active against the disorientation with operation on 2 axis detected by an accelerometer sensor.
If TRIAL485V is rotated by 5° on the **Z** or **X** axis, with respect to its initial position of assembly, produces a tamper alarm for a period of 5s shown by a red LED.

ATTENTION: the circuit is well immunized by vibrations occasional vibrations but should be taken the following precautions:

- The wall on which it is installed must be solid and stable.
- Any joint should be well fixed. First place the detector, then switch-on it. During the installation, it is possible to move the detector even after the switching-on of the system. This will result in a 24H alarm.
- Avoid to drill and to tap the detector without the system disconnection.
- If necessary, it is possible to disconnect via software the against-disorientation circuit.

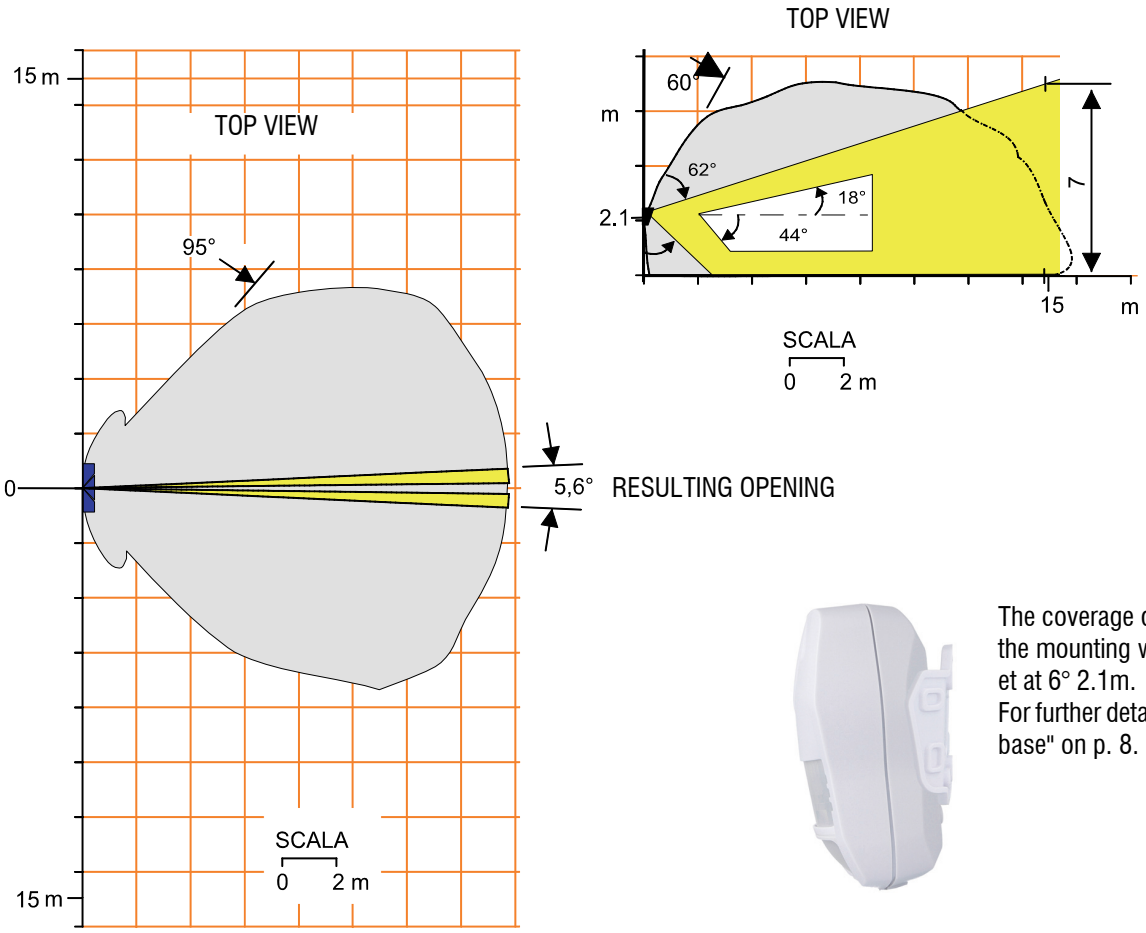
8.8 Detection of low supply voltage

At the detection is generated only the "Fault" event. The alarm circuit is inhibited.

9. COVERAGE DIAGRAM

Coverage diagrams of the detector mod. TRIAL485V with wall protection lens (VB 1.2 GIV1).

Range: 15 m. **IR coverage:** Wall protection, IR opening at 5,6°. **Beams arrangments:** 1 zone on vertical floor.



The coverage diagrams refers to the mounting with angled bracket at 6° 2.1m.
For further details see par. "6 ° tilt base" on p. 8.

IMPORTANT: the user must check that the field of view of the detector is not obscured partially or totally.

10. INDEX

Outdoor double technology detector with vertical lens equipped with under-crawl and anti-masking protection with RS485 interface
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