VENITEM

FARO TRIBALANCE 21.23

OUTDOOR TRIPLE TECHNOLOGY DETECTOR WITH ANTI-MASKING AND PET IMMUNITY

FIG.1

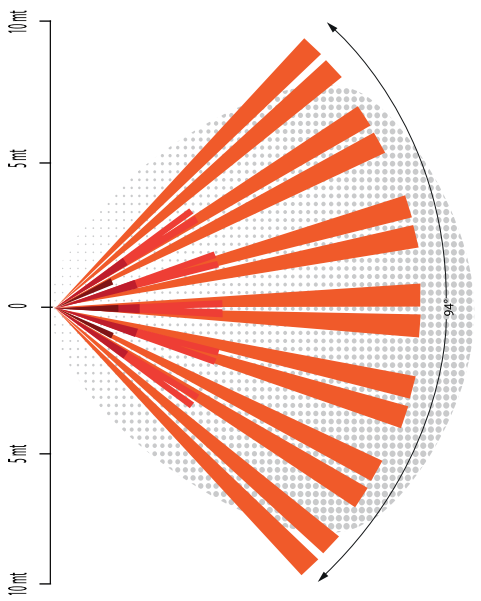


FIG.2

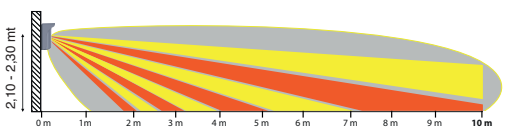
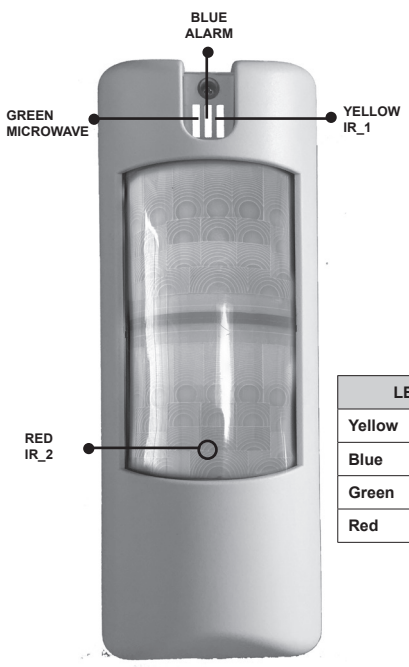


FIG.3

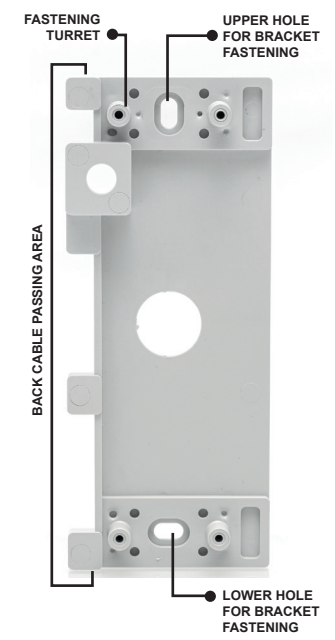


LEDs	
Yellow	IR_1
Blue	Alarm
Green	MW
Red	IR_2

TECHNICAL FEATURES

Power supply:	12V ⎓ +/- 3V
Max. consumption:	45mA
Operation consumption:	13mA
Microwave:	10.525 Ghz
Alarm time:	5 sec
Opto relay:	100mA/24V
Tamper:	100mA/30V
Working temperature:	-10°C/+55°C
Environmental humidity:	95%
Size without accessories:	185x85x80mm

FIG.4A **STAFFA WALL FIX**



DETECTOR BASE FIG.4B

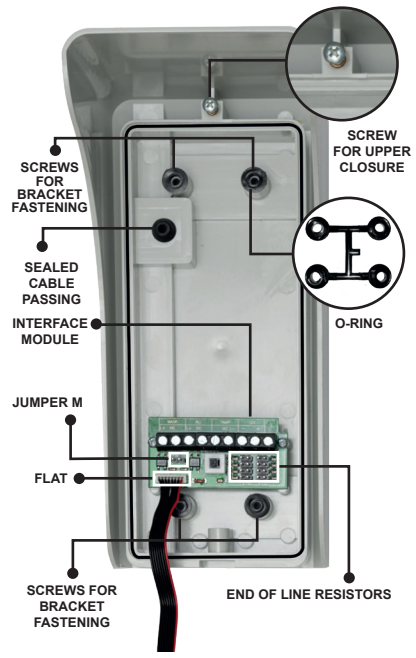


FIG.5A

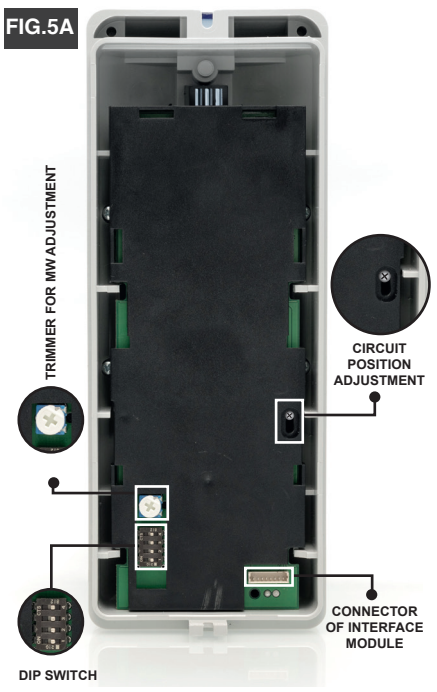


FIG.5B

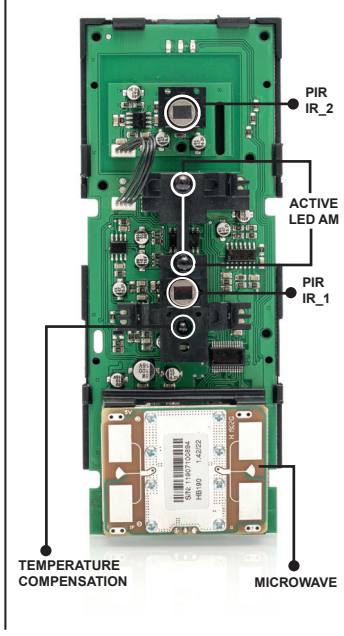


FIG.6

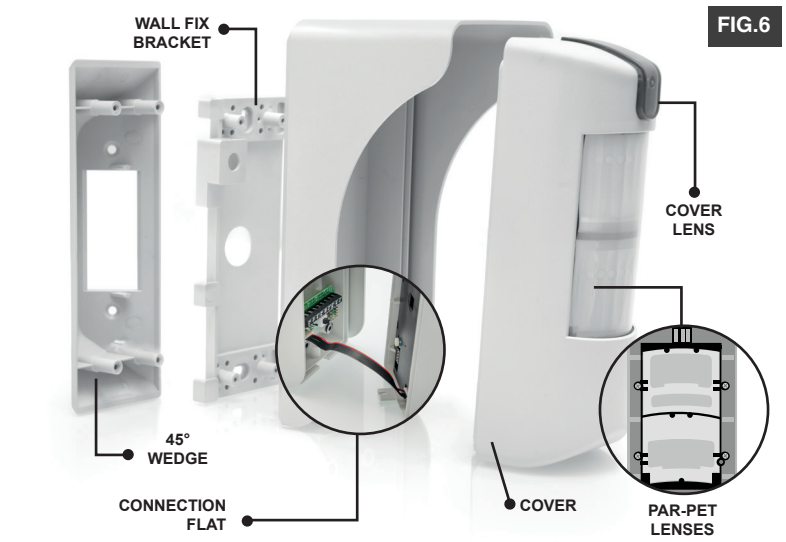
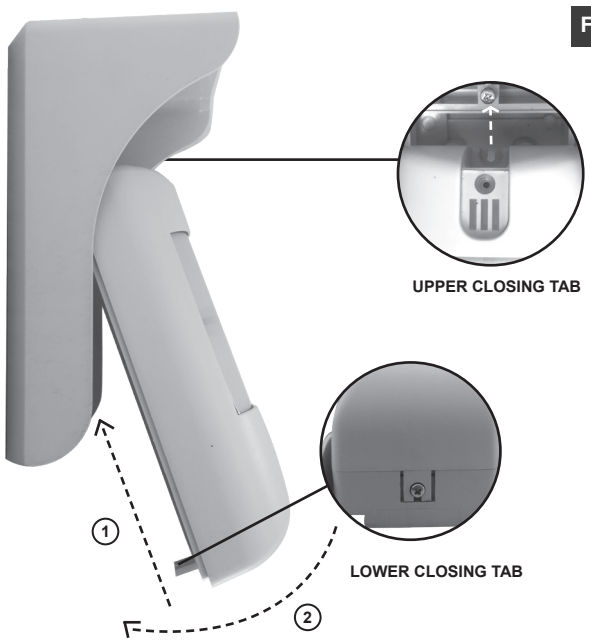


FIG.7



MAIN FUNCTIONS

- Outdoor triple technology detector (two PIR+MW);
- Protection level: IP65;
- Complying with: EN50131-2-4 Degree 2, Class III;
- Two infrared PIR sensors with dual-element technology for high efficiency and filtered for white light;
- Fresnel lenses with 20 zones on 4 levels;
- ACTIVE LEDs ANTI-MASKING;
- Approaching system;
- High-quality polycarbonate housing, UV-stabilized;
- Protected electronic board;
- High-resolution dynamic temperature compensation;
- Pet Immunity with THREE_BALANCE™ logic.

PRODUCT DESCRIPTION

FARO TRIBALANCE 21.23 is an outdoor triple technology detector for installations between 2,10m and 2,30m height from the ground. The sensor consists of two PASSIVE PYROELECTRICS with Fresnel lens and a MICROWAVE.
The detector has an operating range between 2 and 10m.

FARO TRIBALANCE 21.23 features many key points:

- High-performing detection and stability against false alarms thanks to **HIGH-RESOLUTION DYNAMIC TEMPERATURE COMPENSATION**;
- ACTIVE LEDs anti-masking system for detector protection and a microwave approaching system (settable through DIP SWITCHES);
- **Pet immunity guaranteed by the PET IMMUNITY THREE_BALANCE™ logic, with two configuration.**

WARNINGS

Before proceeding to FARO TRIBALANCE 21.23 installation, please consider the following elements:

- Adjust the sensor such that its operating coverage does not coincide with any moving objects (if needed, please use the partializing lens, PAR LIM LM+CM);
- The ground of covered area should not have significant slopes (see section **ADJUSTMENT ACCORDING TO GROUND SLOPE**);
- The bracket used for detector mounting must be firm, without any odd protrusions/grooves and not subject to vibrations;
- Detector positioning must not be under direct sun light;
- Detector coverage area must not include wide reflective surfaces such as metallic ones;
- Pay attention not to darken detector's field of vision with objects, not even in part;
- **Please remember that the best operating condition is given with detection lobes intersecting at 45° the direction of intruder transit.**

INSTALLATION HEIGHT AND PET IMMUNITY

It is highly recommended to install FARO TRIBALANCE 21.23 between 2,10m and 2,30m height from the ground. Please refer to the centre of the lens. The function Pet Immunity requires the partializing lens PAR-PET, fitted as standard on Fresnel lenses **(FIG.6).**

DETECTOR FIXING

Mount the WALL FIX BRACKET on the wall **(FIG.4A)** using screws suitable for wall material. Drill two holes, coinciding with the "HOLES FOR BRACKET FASTENING" highlighted in figure 4A. Apply the O-rings **(FIG.4B)** inside the cylindrical turrets located on the "BASE" to avoid infiltrations through the holes on the turrets. After running the cable in its specific "SEALED CABLE PASSING" on the base, place the detector base on the fixing bracket aligning so that the turrets for bracket fixing are on cylindrical holes on the base. Fasten the base to the bracket using the 4 "SCREWS FOR BRACKET FASTENING" – operate from the inner of the base. After installation, wiring and flat cable inserting, slide the detector towards the upper closing screw and slightly press downwards **(FIG.7)**. Fasten both upper and lower screw to ensure total closure. Pay attention not to place hands or tools in front of the Fresnel lens as this may cause improper self-calibration of anti-masking system.

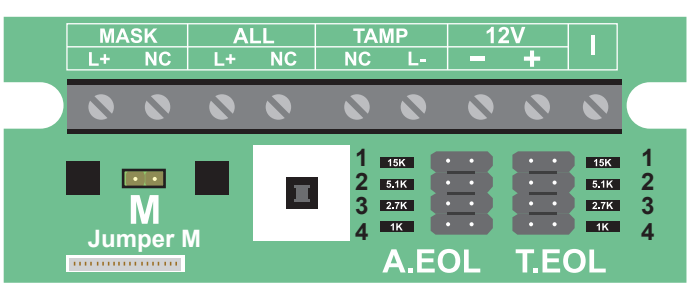
WIRING

Wire the SYSTEM CABLE on the INTERFACE MODULE terminal board, following the instructions of **FIG.8**.
Make connections as indicated in **FIG.8-9**.
Through the 2 jumpers ALL EOL 1…4 and TAMP EOL 1…4 and jumper M **(FIG.9)**, it is possible to select the end of line resistors for double or triple balancing. Resistors are connected as indicated in the table below. The line coming from the control panel must be connected with a pole to terminal <L-> and the other one to terminal <L+ALL> or <L+MASK>. With jumper M closed and <L+MASK> connected, Mask contact is in series with tamper contact. At this point, it is possible to get a triple balancing by applying a resistor of value required by the control panel **(R3B FIG.9)** to MASK terminal. With no resistor selected and jumper M open, contacts are independent.
Once the appropriate adjustments are made, close the detector fastening the 2 specific screws (one located in the upper part under the "roof", the other one located in the lower part near the closing slot of the sensor).

TERMINAL BOARD

FIG.8

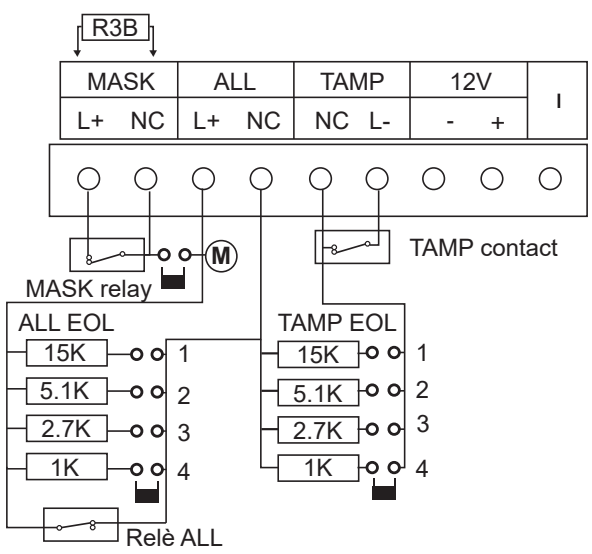
I	INPUT: aux input
+	12V power supply input
-	
TAMP	NC tamper
ALL	NC alarm relay
MASK	NC anti-masking relay

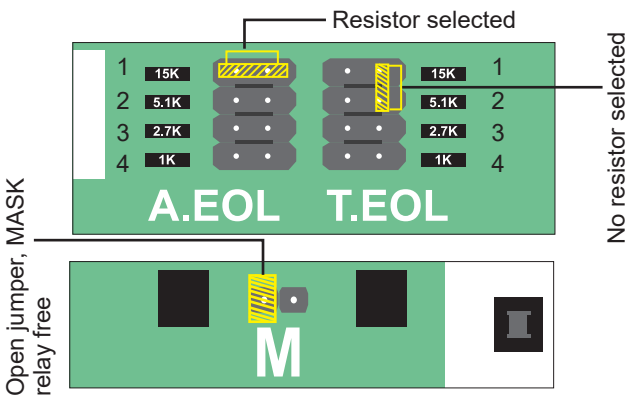


JUMPER M: if connected, alarm relay is in series with anti-masking relay.

DEOL OUTLINE

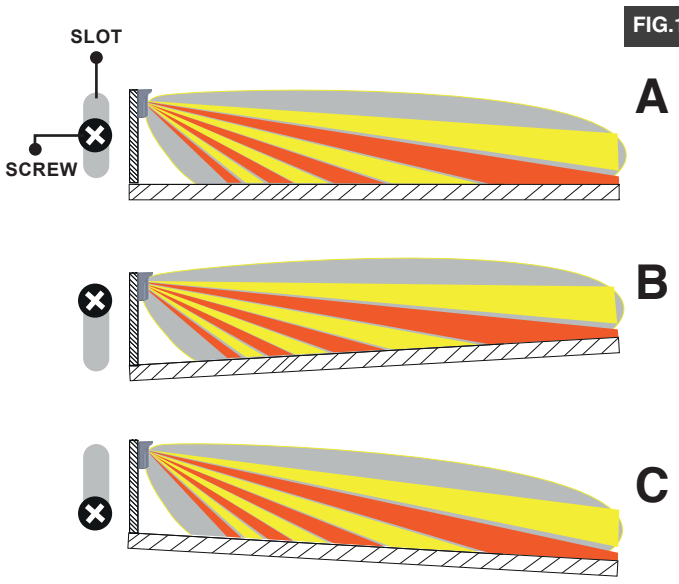
FIG.9





ADJUSTMENT ACCORDING TO GROUND SLOPE

FIG.10



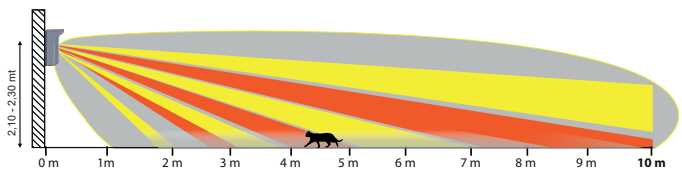
PROPER DETECTOR POSITIONING

PET CONFIGURATION

FIG.11

Max. weight 10kg
Max. height 30cm

ACCESSORY
PAR-PET (Fig.6)

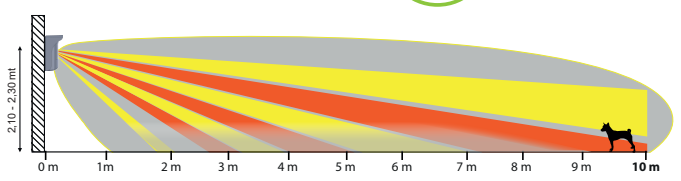


MAXI PET CONFIGURATION

FIG.12

Max. weight 25kg
Max. height 70cm

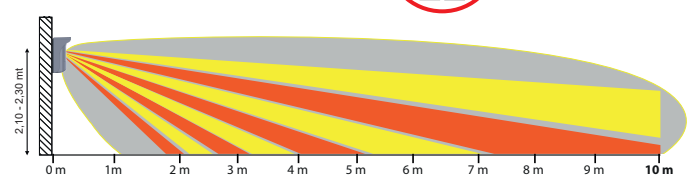
ACCESSORY
PAR-PET (Fig.6)



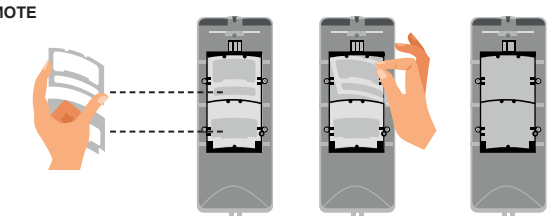
INDUSTRIAL CONFIGURATION

FIG.13

REMOVE
PAR-PET

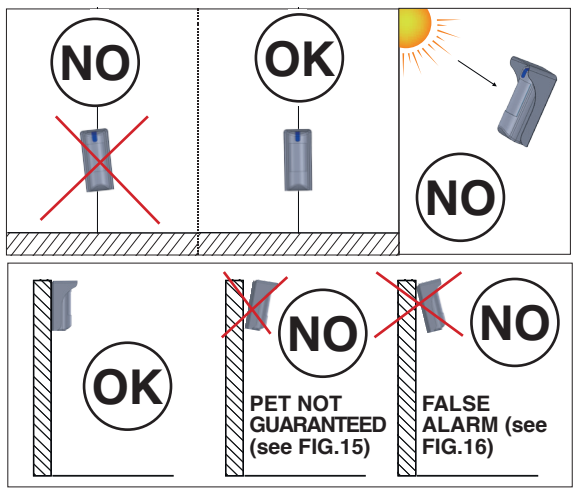


HOW TO REMOTE PAR-PET



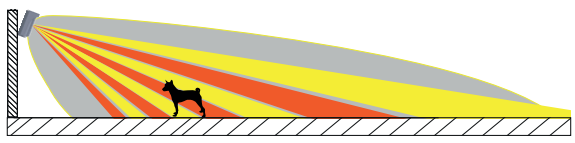
EXAMPLES OF IMPROPER POSITIONING

FIG.14



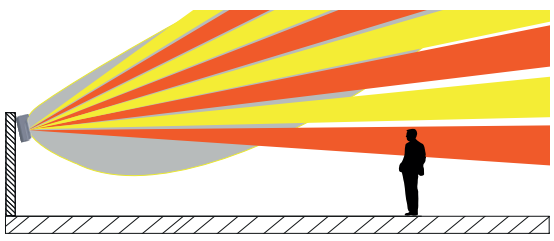
ERROR: NO PET / REDUCED RANGE

FIG.15



ERROR: FALSE ALARM / NO DETECTION

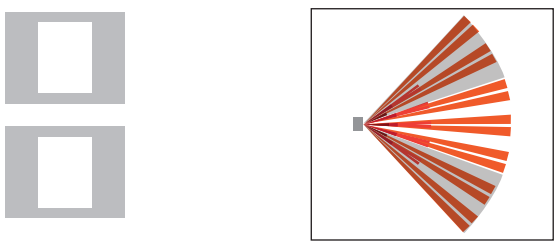
FIG.16



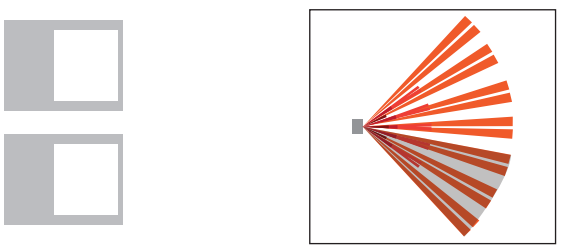
PARTIALIZING LENSES FOR COVERAGE LIMITATION (provided)

PAR-LIM-CM
To limit detection to central zone

FIG.17



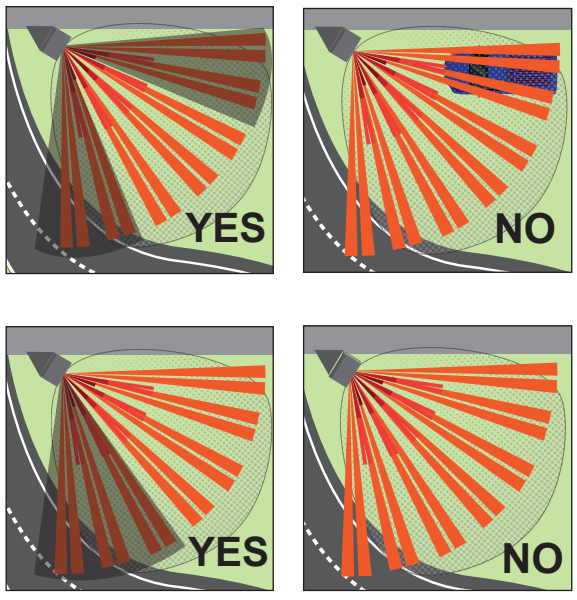
PAR-LIM-LM
To limit detection to side zone



45° WEDGE INSTALLATION

Detector fixing is ensured by the supported fixing system with **"45° WEDGE"** bracket, that allows to turn coverage 45° to the left or right in relation to the installation wall (**FIG.18**).

FIG.18



SETTINGS

To perform settings, use the DIP SWITCHES located on the back of the board **(FIG.5A).**

DIP SWITCH 1

DIP SWITCH 1 in OFF position: Anti-masking disarmed

DIP SWITCH 1 in ON position: Anti-masking armed

DIP SWITCH 2 (Active only with DIP1 in ON position)

DIP SWITCH 2 in OFF position (default): It binds anti-masking detection to any approach detection on behalf of the microwave.

DIP SWITCH 2 in ON position: It deactivates the function

DIP SWITCH 3

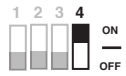
DIP SWITCH 3 in ON position: PET Configuration (FIG.11)

Max. weight 10kg/Max. height 30cm

DIP SWITCH 3 in OFF position: MAXI Configuration (FIG.12)

Max. weight 12kg/Max. height 70cm

DIP SWITCH 4



DIP SWITCH 4 in ON position: LED OFF
After "Walk Test", this allows to cancel alarm led signalization.

ANTI-MASKING

When detector is closed, avoid any movements close to the device as this might compromise the SELF-CALIBRATION of anti-masking system. If the detector gets masked, the three LEDs will blink simultaneously (GREEN, BLUE, YELLOW).
NOTE: Pay attention not to place hands or tools in front of the Fresnel lens as this may cause improper self-calibration of anti-masking system.

WALK TEST

Before running "Walk Test", remove the COVER LENS (FIG.7) (for a better visualization). The COVER LENS will be replaced at the end of calibration. During "Walk Test", all LEDs will be visible. These will remain active for 20min after front plate closure to allow detector verification/calibration. After this period, only the alarm LED will be displayed (unless prior function has been set to LED OFF_DIP4).

To run Walk Test proceed as follows:

- Adjust the trimmer so that people crossing can be detected within detector coverage area, not more (this to avoid PET inefficiency). Trimmer positioning for max. 10m coverage, as shown in **FIG. 11-12**;
- Check detector alarm;
- If alarm is absent because of a not simultaneous switching-on of the two IRs, **please see section "ADJUSTMENT ACCORDING TO GROUND SLOPE" – FIG.10**;
- As per factory default, in case of a stable closed environment where no MW emission can occur, it is possible to set the trimmer with higher range/sensitivity. For this reason, rotate the trimmer to the maximum (as shown in **FIG.13**) for a maximum range of 10m and then remove "PAR-PET" partializing lens (**FIG.6**). This configuration does not guarantee pet immunity.

ADJUSTMENT ACCORDING TO GROUND SLOPE

In case of slopes, use the SCREW FOR GROUND ADJUSTMENT sliding the board in relation to the screw as shown in **FIG.10**.

- downhill ground: slide the circuit downwards (**FIG.10C**);
- uphill ground: slide the circuit downwards (**FIG.10B**).

Proceed to adjustment step-by-step in order to avoid an excessive detection beam rotation. Start from central position and then slide the circuit gradually until the best condition is obtained. After checking that YELLOW and RED LEDs are visualized at the same time, adjust the microwave (referring to MW ADJUSTMENT TRIMMER) to limit coverage area at required distance (as described in section "WALK TEST").

PARTIALIZING LENSES FOR COVERAGE LIMITATION

When it comes to detector coverage limitation (for example in case of vegetation, moving objects, disturbed areas), apply these partializing lenses:

- PAR-LIM CM to limit detection to central beams only (**FIG.17**);
- PAR-LIM LM to limit detection to one side of the detector (**FIG.17**).

DETECTOR CLOSURE

Once the appropriate adjustments are made (wirings, DIP SWITCH setting, range adjustment, partializing lenses application), close the detector fastening the 2 specific screws (one located in the upper part under the "roof", the other one located in the lower part near the closing slot of the sensor).

NOTE: Pay attention not to place hands or tools in front of the Fresnel lens as this may cause improper self-calibration of anti-masking system.

COMPLIANCE DECLARATION

VENITEM Srl declares that this radio equipment is compatible with the essential requirements of the Directive 2014/53/UE. The declaration of conformity is available on website: www.venitem.com.

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