



VIPER is an innovative outdoor passive infrared sensor, whose peculiarity is to have two completely independent and individually orientable IR heads. This allows to obtain a great versatility of operation and at the same time, if correctly installed, an excellent reduction of unwanted alarms. The sensor operates in AND mode: an alarm is generated only when both heads detect intrusion. It is also possible to select the priority of the head that determines the alarm. VIPER supports the innovative Wireless Walk Test and Programming System, composed of the VIEW SENSOR software and the mod. BT-LINK-S (supplied separately). In addition to the parametric adjustment to the outside temperature, the sensor has complete protection against tampering: anti-opening, anti-removal and anti-masking.

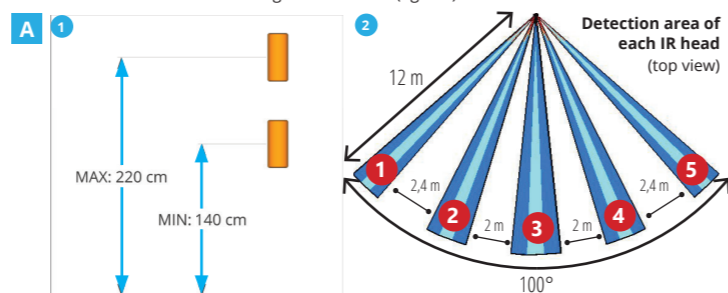
READ CAREFULLY THIS MANUAL BEFORE INSTALL YOUR NEW ALARM SYSTEM. KEEP THIS MANUAL FOR FUTURE REFERENCE.

ONLY QUALIFIED TECHNICIAN MUST INSTALL THIS DEVICE. INSTALLER MUST FOLLOW CURRENT REGULATIONS.

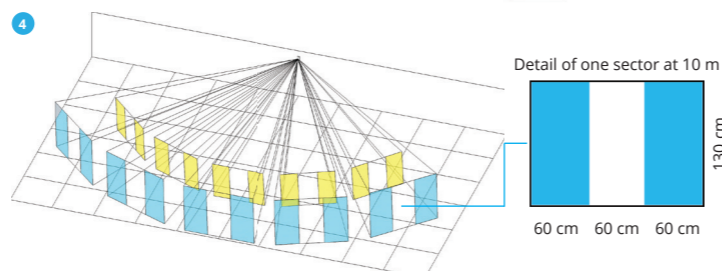
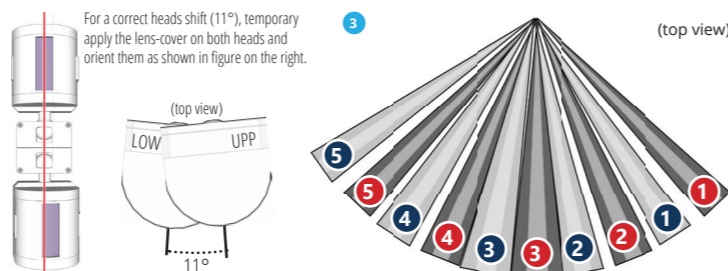
THE MANUFACTURER SHALL NOT BE LIABLE FOR ANY IMPROPER USE OF THE PRODUCT, INCORRECT INSTALLATION OR FAILURE TO COMPLY WITH INSTRUCTIONS OF THIS MANUAL AND THE LAW REGARDING ELECTRICAL SYSTEMS.

DETECTION AREA

Installation height of the sensor must be between 140 cm and 220 cm (fig. A-1). The detection area is max 12 m long and 100° wide (fig. A-2).



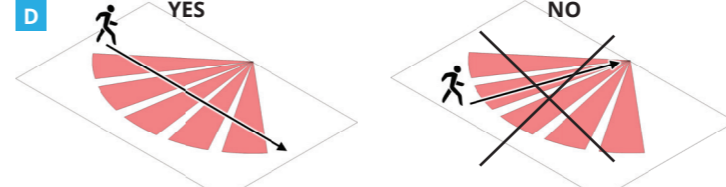
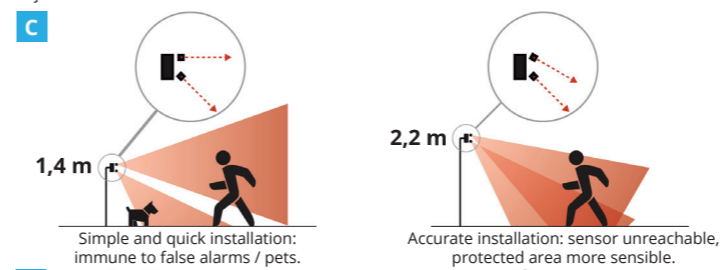
It is recommended to orient both IR heads towards the same area but shifted (about 11°, to alternate the upper and lower sectors) to avoid missing detections (fig. A-3).



Each detection head is equipped with a Fresnel lens that builds 5 sectors, each divided in a couple of beams (fig. A-4).

INSTALLATION (PLACEMENT)

Mount the sensor vertically, without front or side inclination: the joint of each IR head allows to adjust the orientation.



To obtain a reliable detection, it is recommended to mount the detector in the way that the intruder crosses beams perpendicularly and not with frontal approach (fig. D).

Never point the heads directly towards reflective surfaces, in order to avoid unwanted detections. Typical reflective surfaces: windows, glass, water puddles, wet roads, smooth concrete surfaces, paved roads. These surfaces can reflect a sufficient amount of heat (very strong sources) or infrared (other security systems, photocells...) to cause alarms.



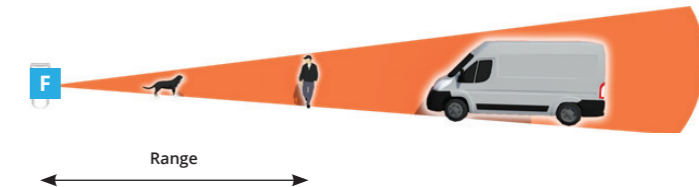
Do not point the heads causing parallel beams to the ground. The beams should always end against a surface (wall, ground) so to define the detection area. Do not point towards open space.

INSTALLATION (WHAT TO KNOW ABOUT)

! THE SENSOR WORKS ONLY WITH THE COVER ON ITS PLACE !

AFTER EACH CHANGE TO DIP AND TRIMMER: (MANDATORY) PLACE THE COVER TO PERFORM TESTS WAIT AT LEAST 3 SECONDS (THE SENSOR READS NEW SETTINGS)

- The sensor has a IP54 protection level against dust and liquids. To maintain the IP54 level it is mandatory to insert the o-rings provided. If possible, it is suggested to install the sensor protected against weathering; do not point high pressure water jets to the sensor.
- Infrared detector is sensitive to the "amount of heat" produced by a moving body. The maximum range of the sensor (measured in meters) is referred to a human body. However the same "amount of heat" may be produced by a smaller body at lower distances (dog), or by a larger one at greater distances (vehicle).



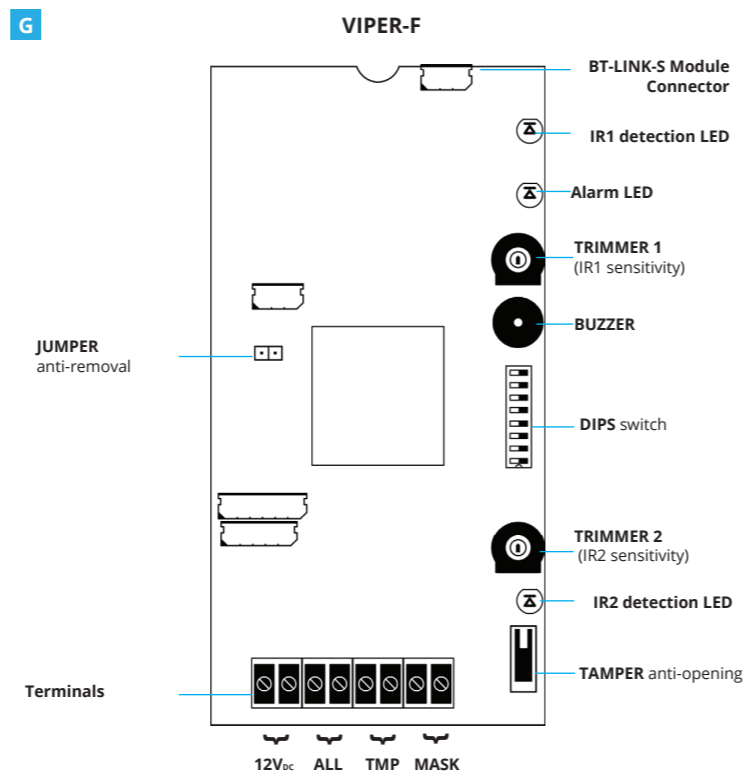
- Once fixed the sensor, slightly loose the screws of the head joints for a more easy head pointing.
- Do not point the sensor towards unstable objects, such as: bushes, flags, tree branches, clothes hung, etc. This avoid unwanted detections.
- During adjustment, perform several detection tests to verify the correct working of the sensor. For best IR "sensitivity" adjustment, start setting the sensitivity to minimum (turn completely counter-clockwise the trimmers) and point the heads downwards. Gradually increase the sensitivity and change the heads orientation until obtain detection only inside the wanted area. Tight the joint screws once finished the adjustment.
- The sensor may detect pets over 10Kg.

TECHNICAL

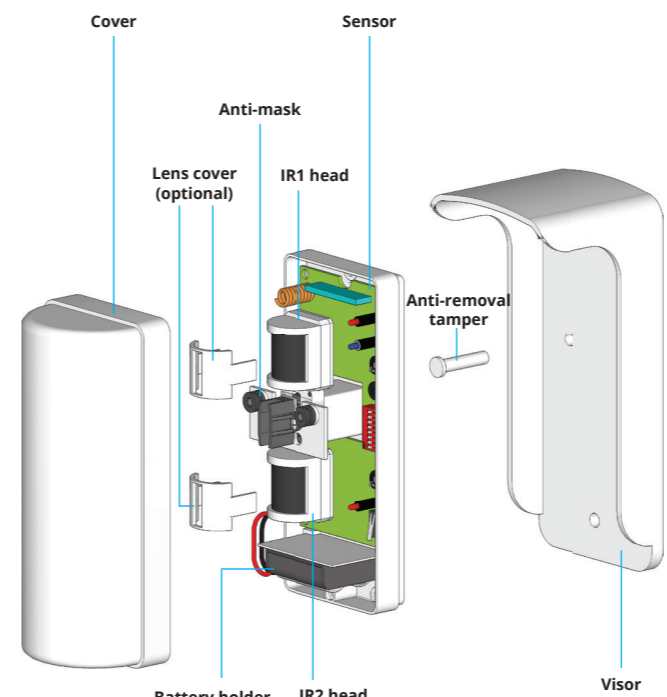
	VIPER-F	
Power supply	12 V _{DC}	
Absorption *	Stand-by: about 14 mA Alarm: about 12 mA	
Autonomy (estimated) **	-	
Stabilization Time (at power-up)	About 2 minutes (with LED blink)	
Quiet Time between detections	-	
Detection technologies	Infrared (double PIR head with joint)	
Thermal compensation	Automatic compensation	
Alarm logics	AND, Directional AND	
Installation height	140 ÷ 220 cm	
Detection area (H x W x D) *	Max 12 m 100° wide (each IR head)	
IR head adjustment	Orientation completely independent (vertically and horizontally)	
Sensitivity	Independent for each head (trimmers) from 30% (min) to 100 % (max)	
Radio frequency / range	-	
Anti-masking	Active infrared	
Radio signals	-	
Wired outputs	OptoMOS N.C. type (open an alarm occurs or if power is off)	Alarm Tamper Masking
LEDs	2 red LEDs (IR heads detection) 1 blue LED for alarm	
Temperature / Humidity	-40 + +70 °C / 95 % (relative)	
Case / IP degree / IK degree	ABS antiUV / IP54 / IK10	
Dimension (H x W x D) / Weight	190 x 85 x 75 mm / 328 g	
Internal space for transmitter (H x W x D)	-	
Accessories included	n. 2 lens cover for curtain effect n. 2 pre-cut adhesive masks	

* All the data are approximate, for sensor in NORMAL mode at operating temperature of 21 °C.
** Mean value for 10 detections-alarms/day + supervision.

COMPONENT DIAGRAM



PARTS OF THE SENSOR



POWER ON

If the sensor is already powered, before proceeding it is necessary to switch off the power supply and keep the anti-removal tamper pressed for about 3 seconds: in this way the circuit is completely discharged and the sensor can be started correctly. Supply the sensor: the sensor enters the "initialization" phase. The detection LEDs flash alternately for 30 seconds. It is important to leave the sensor "at rest" (no detection). At the end of the stabilization the LEDs turn off and the sensor can be used. To reset the sensor, disconnect the power supply and repeat the procedure described above.

ACTIVE ALARM LED IN NORMAL MODE

- To activate the **ALARM LEDS** in normal operation:
- put **DIP1 = ON** and **DIP2 = ON** and close the cover
 - wait until the sensor exit automatically from walk-test (about 15 min): the sensor returns to NORMAL mode
 - now the **ALARM LED** is active, signaling the alarm events that occur during the measurements

ATTENTION: THE SENSOR IS OPERATIVE ONLY WITH THE COVER! After each modification of the dips and trimmers it is necessary to close the cover and wait for at least 3 seconds during which the sensor reads the settings.

SENSITIVITY

To adjust the sensitivity of the upper infrared head, act on trimmer **R1**. To adjust the sensitivity of the lower infrared head, act on the **R2** trimmer. The adjustment range is: 30% (minimum, counterclockwise) ÷ 100% (maximum, clockwise).

DIPS-SWITCH FUNCTIONS

To program the sensor, use the DIPS switches (Fig. D-1). The functions of the DIPS are described in the following paragraphs.

WARNING! When DIP7 = ON the sensor configuration is done via VIEW SENSOR, then some DIPS are not working (see DIP7).

	ON	←	OFF
ANTIMASKING ON TAMPER	ENABLED	8	DISABLED
REMOTE PROGRAMMING	ENABLED	7	DISABLED
NOT USED			
AND/DIRECTIONAL AND	DIRECTIONAL	6	AND
ANTI DISTURBANCE	ENABLED	4	DISABLED
ANTIMASKING	ENABLED	3	DISABLED
WALK-TEST LOWER IR	ENABLED	2	DISABLED
WALK-TEST UPPER IR	ENABLED	1	DISABLED

DIPS 1 - 2 WALK-TEST

Through the **DIPS 1 - 2** the WALK-TEST is enabled on one or both heads to perform the orientation and the adjustments of the sensor. The sensor automatically exits from any WALK-TEST mode after approximately 15 minutes. During the WALK-TEST there are luminous and acoustic signals to facilitate the operation; in NORMAL mode no signal is emitted, unless the alarm LED is activated (see "ACTIVE ALARM IN NORMAL MODE"). Four combinations are possible:

DIP1 = ON - DIP2 = OFF

In this way, only the WALK-TEST of the upper head (IR1) is enabled. After closing the cover the upper RED LED lights up to indicate the status of WALK-TEST IR1. Walking in front of the sensor each time the head detects, the BLUE alarm LED lights up.

DIP1 = OFF - DIP2 = ON

In this way, only the WALK-TEST of the lower head (IR2) is enabled. After closing the cover the lower RED LED lights up to indicate the status of WALK-TEST IR2. Walking in front of the sensor each time the head detects, the BLUE alarm LED lights up.

DIP1 = ON - DIP2 = ON

With this setting the WALK-TEST of both heads is enabled, simulating the operation in NORMAL but bound to the selected detection logic (DIP5). When a head detects the relative red LED lights up; when both detect the BLUE alarm LED lights up.

DIP1 = OFF DIP2 = OFF

It is the normal functioning mode of the sensor (NORMAL MODE). After a detection with relative alarm transmission it is necessary to wait for the end of the quiet time (if set by DIP6) in order to have a new alarm. The buzzer is always off.

With VIEW SENSOR you can easily perform a much more precise WALK-TEST, which allows you to configure the sensor optimally.

DIP3 - ANTI-MASKING

The anti-masking device protects the sensor 24/24 in case an attacker wants to blind the sensor by covering it so as to prevent detection. Anti-masking does not work without the cover on the sensor.

- **DIP3 = OFF** Anti-masking disabled: no anti-masking protection
- **DIP3 = ON** Anti-masking enabled: you have an alarm mask when you cover the sensor in order to avoid detections.

he MASK alarm is activated if masking persists for more than one minute. Following the MASK alarm, the sensor returns to rest even if it remains masked. The anti-masking protection is always active (when enabled with **DIP3 = ON**) even when the central panel is switched off. Respect an area of approximately 30 cm in front of the sensor in which people must not stand more than a minute. Also, do not leave open doors, loose clothing or furniture items near the sensor. The anti-masking function is active with ambient temperature above 0 ° C.

Through VIEW-SENSOR it is possible to extend the operating temperature of the anti-masking to values lower than 0 ° C.

9

10

PROTECTION FROM TAMPERTIES

The sensor is protected against tampering attempts by means of three controls: anti-opening of the cover, anti-removal and anti-masking.

ANTI-OPENING

Protection against opening of the sensor cover.

ANTI-REMOVAL

Protection against removal from the installation position. Protection activated by opening the rear switch to the body (normally closed because the sensor is placed against a wall).

To include / exclude this protection act on the **JUMPER ANTI REMOVAL**:

- closed = Rear tamper not included
- open = Active back tamper

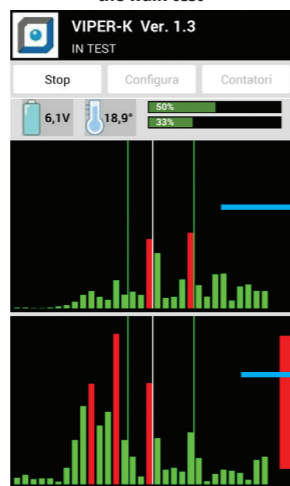
VIEW SENSOR

VIEW SENSOR is the innovative application developed on Windows and Android platform that facilitates the installation of outdoor sensors.

VIEW SENSOR allows you to adjust the sensor optimally to better define the area you want to protect, minimizing improper alarms. The application allows you to perform a walk-test completely innovative: through wireless connection you can view in real time on your device (PC, tablet or smartphone) the level of signal perceived by the individual heads, as well as configure the sensor without intervening manually.

To use VIEWS SENSOR you need the optional BT-LINK-S module that connects to the sensor only for the duration of the walk-test and then is removed to be reused on other sensors.

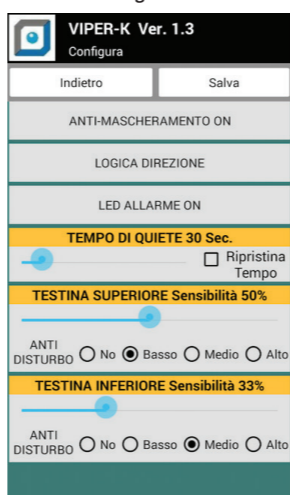
Example of a mobile screen during the walk-test



Signal level at the upper head

Signal level at the lower head

Example of a mobile screen during configuration



13

14

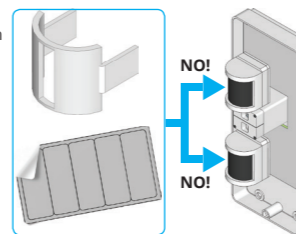
DIP4 - ANTIDISTURBANCE

This function increases the immunity to false alarms in particularly difficult outdoor environments, disturbed by sudden light reflections, variations in exposure to the sun, unstable objects (eg tree fronds, flat linen, etc ...).

- **DIP4 = OFF** Antidisturbance disabled
- **DIP4 = ON** Antidisturbance enabled

This function can be set with different values using VIEW SENSOR (DIP7 = ON).

When using this function **DO NOT** apply the lens cap or the adhesive mask on the heads!

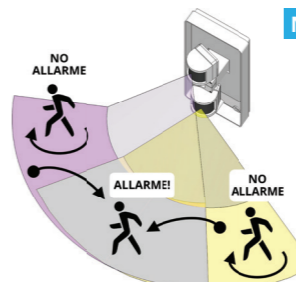


DIP5- AND/DIRECTIONAL AND

AND (DIP5 = OFF)

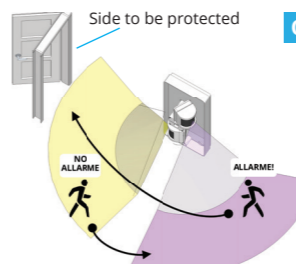
The sensor give alarm only when BOTH the IR heads detect movement within an "AND" time. When the first IR head detects, the "AND" time starts; if the second IR head detects beyond this time, the sensor returns to rest without alarm. Detection of a single head does not generate an alarm.

The IR heads must be oriented in the same direction (slightly out of phase in order to alternate the upper and lower beams). The "AND" time can not be changed.



DIRECTIONAL AND (DIP5 = ON)

It is an "AND" like the previous one, but with an order to cross areas. The sensor generates an alarm only if it detects first the upper head (far area) and then (within the "AND" time) the lower head (near area). In this way a "directionality" is given to the detection: the sensor distinguishes the approach to the protected area (alarm) but ignores the removal.

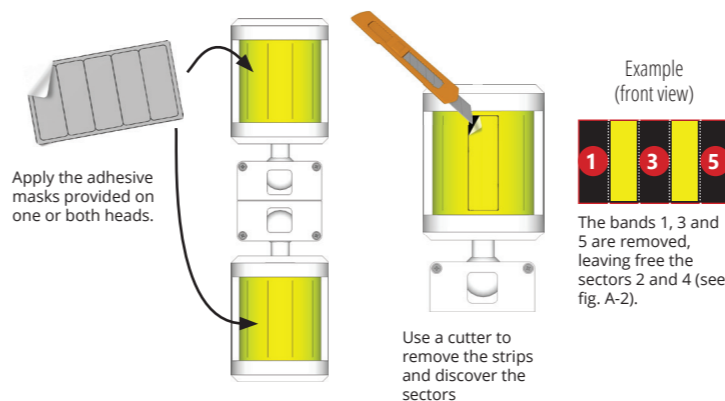


ACCESSORIES

Sometimes the heads detection area can be too wide and it can be a potential trouble if in the area to be protected there are tree branches, curtains, windows, etc. In this case, it is possible to reduce the detection area by masking some beams with the accessories provided, to have detection only from beams oriented towards stable zones.

ADHESIVE MASK

This type of mask allows to select exactly which beams can detect: it is possible to leave covered the zones with unwanted movement or limit the detection only for some sectors.



Apply the adhesive masks provided on one or both heads.

Use a cutter to remove the strips and discover the sectors

Example (front view)
The bands 1, 3 and 5 are removed, leaving free the sectors 2 and 4 (see fig. A-2).

DIP7 - REMOTE PROGRAMMING

Select whether the sensor uses the hardware settings (trimmers and DIPS) when in OFF, or those set by VIEW SENSOR when in ON.

- **DIP7 = ON** **REMOTE PROGRAMMING ENABLED**
enables remote sensor programming via the VIEW SENSOR application available for mobile devices. This option provides greater flexibility in setting sensor parameters and allows real-time verification of changes to settings. For remote programming, the BT-LINK-S accessory, supplied separately, is required. With **DIP7** in the **ON** position the **DIPS 3-4-5-6** and the trimmers are deactivated because their functions are set via VIEW SENSOR. **DIPS 1 - 2 - 8** remain active. After memorizing a configuration using VIEW SENSOR, **DIP7** must remain **ON**, even after the WALK-TEST has ended.
If you place DIP7 in ON but you have not loaded a configuration via VIEW SENSOR, the sensor will use the hardware configuration

- **DIP7 = OFF** **REMOTE PROGRAMMING DISABLED**
the sensor configuration is done by DIPS and trimmers. This manual mainly explains the **HARDWARE** settings (via DIPS, trimmers and jumpers), for information on remote programming refer to the BT-LINK-S module manual and the VIEW SENSOR app.

ONCE USED SOFTWARE CONFIGURATION, LEAVE THE DIP7 = ON, OTHERWISE THE SENSOR RETURNS TO THE MANUAL SETTINGS
IF YOU DO NOT USE THE SOFTWARE CONFIGURATION SYSTEM, ALWAYS LEAVE THE DIP7 IN THE OFF POSITION

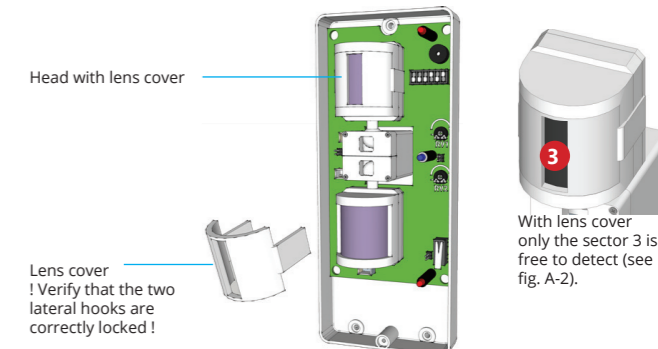
DIP8 - ANTIMASKING ON TAMPER

In the OFF position the sensor uses the MASK output to signal a masking alarm. If you can not or do not want to use this terminal, for example in the case where the antimasking is not managed by the control panel used, DIP8 can be set to ON and in case of masking alarm the sensor will use the TAMPER terminal. In this way a single pair of wires is used for the two alarms.

- **DIP8 = ON** The sensor uses the TAMPER terminal in case of anti-masking.
- **DIP8 = OFF** The sensor uses the MASK clamp in case of anti-masking

LENS COVER

The lens cover - when mounted on head - creates a CURTAIN detection. With this lens cover, the detection opening beam of the lens is reduced to 20° (keeping the same detection range). The lens cover mount on heads thanks to an interlocking system.



Head with lens cover

Lens cover ! Verify that the two lateral hooks are correctly locked !

With lens cover only the sector 3 is free to detect (see fig. A-2).

After inserting the accessories for partitioning the IR head lens, it must always be verified by the WALK TEST that there is no conflict with the "ANTI-NOISE" function which could compromise the functionality of the sensor.

DUEVI s.r.l. - Via Bard 12/A, 10142 TORINO - ITALY
Made in Italy

This manual may be subject to change without notice

EU Declaration of Conformity
Hereby, DUEVI declares that:
the equipments type outdoor detector mod. VIPER-F is compliance with Directive EMC 2014/30/EU.



The full text of the Declaration is available at the internet address www.duevi.eu

Pursuant to Legislative Decree 49 of 14 March 2014 "Implementation of Directive 2012/19 / EU on waste electrical and electronic equipment (WEEE)". The symbol of the crossed bin shown on the appliance indicates that the product at the end of its useful life must be collected separately from other waste and transferred to suitable collection centers for electronic and electrotechnical waste. The illegal disposal of the product by the user involves the application of the administrative sanctions referred to in Legislative Decree n. 49 of 14/03/2014.

15

16