



VIPER is an innovative outdoor passive infrared sensor. The two completely independent and individually orientable IR heads 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 of the heads: 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.

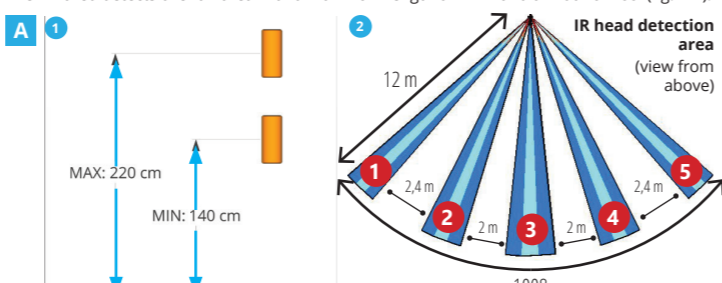
READ CAREFULLY THIS MANUAL BEFORE INSTALL YOUR NEW ALARM SYSTEM. KEEP THIS MANUAL FOR FUTURE REFERENCE.

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

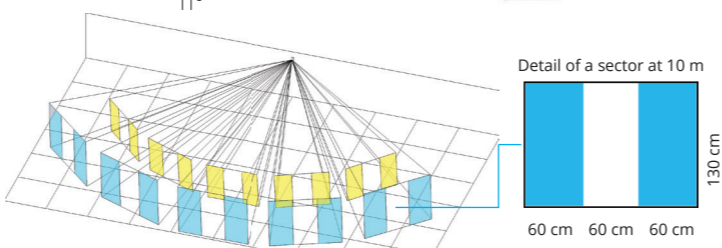
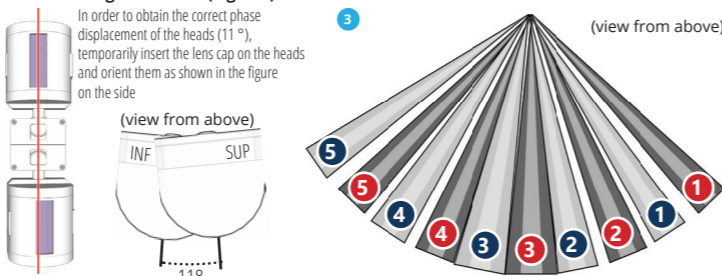
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DETECTION AREA

The installation height of the sensor must be between 140 cm and 220 cm (fig. A-1). The infrared detects over an area with a maximum length of 12 m and a width of 100 (fig. A-2).



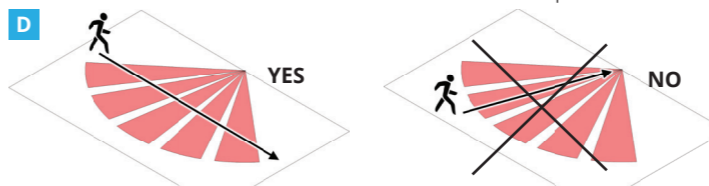
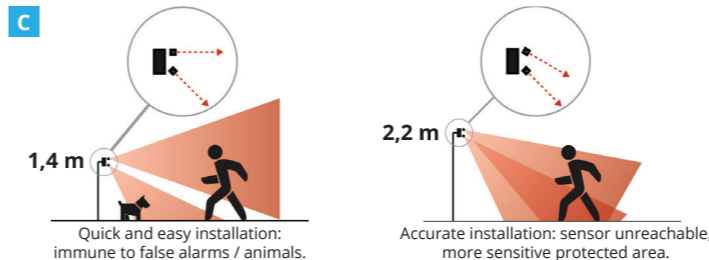
It is recommended to orient both the heads towards the same area but out of phase (about 11°, in order to alternate the beams of the upper head with the lower one) to avoid missing detections (Fig. A-3).



Each head is equipped with a Fresnel lens which generates 5 pairs of fan-oriented sectors (Fig. A-4). We recommend the use of VIEW SENSOR to easily analyze in detail the areas covered by the sensor beams

INSTALLATION POSITION

Mount the sensor vertically, without frontal and lateral tilt: it will be the articulation of the IR heads to allow the pointing of the sensor.



It is advisable to mount the sensor so that the intruder crosses at least two sectors in a perpendicular way and not with a front approach (Fig. D).

The sensor **MUST NEVER** point directly towards reflecting surfaces to avoid unwanted detections.

Typically reflecting surfaces: windows, pools, wet roads, smooth surfaces, paved roads. These surfaces can reflect sufficient quantities of heat (very strong sources) or infrared (other safety systems, photocells ...) to cause alarm.



Do not orient the heads with the beams parallel to the ground. The beams should always end against a surface (wall, ground) so that the detection area is confined. Do not aim for an 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).



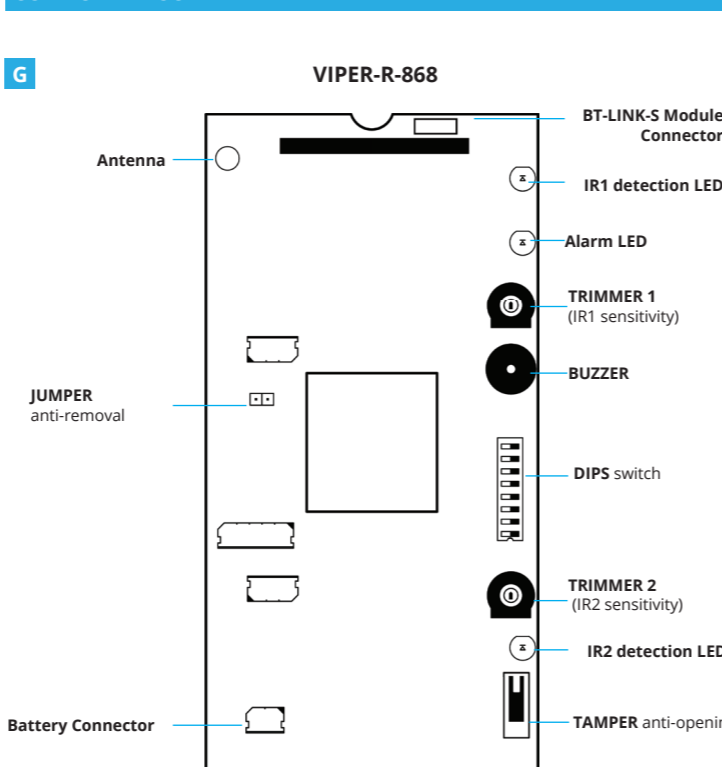
- Once fixed the sensor, slightly loose the screws of the head joints for a more easy head pointing.
- Do not point the sensor towards unstable objects, such as: bushes, flags, tree branches, clothes hung, etc. This avoid unwanted detections.
- During adjustment, perform several detection tests to verify 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.
- In order to generate a useful signal for the IR head, at least two sectors must be crossed (FIG.A). Therefore it is advisable to orientate the head rotating it in an appropriate way so that conditions of crossing of a single sector are avoided.

TECHNICAL

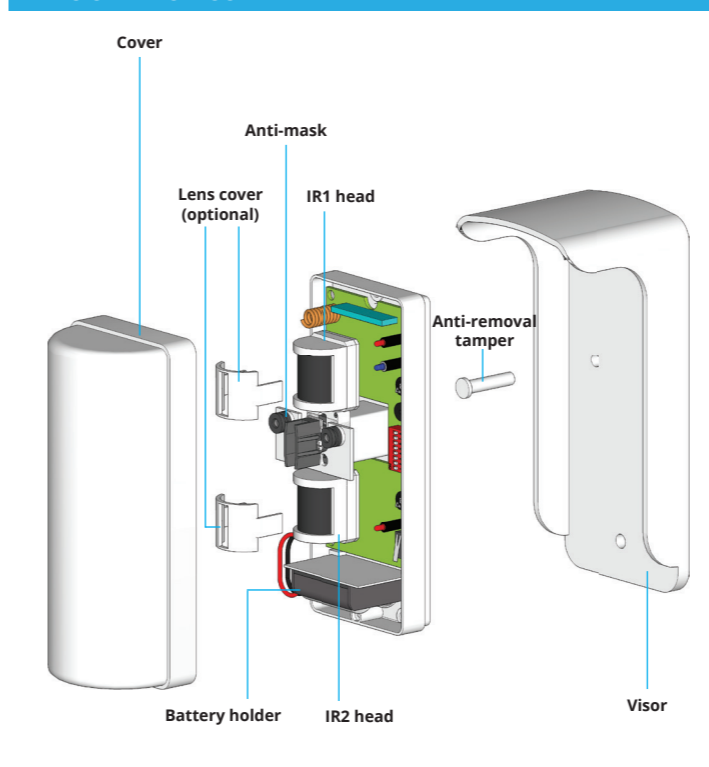
VIPER-R-868	
Power supply	N. 2 lithium batteries 3 V, mod. CR123A
Absorption *	Stand-by: about 15 µA Alarm: about 18 mA
Autonomy (estimated) **	About 2 years
Stabilization Time (at power-up)	About 2 minutes (with LED blink)
Quiet Time between detections	About 30 seconds
Detection technologies	n. 2 Infrared head
Thermal compensation	Automatic compensation
Logic detection	And, Directional and
Installation height	140 ÷ 220 cm
Detection area (H x W x D) *	Max 12 linear meters (adjustable: 3 m ÷ 12 m) 100 ° radial opening, each 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	869,650 MHz / 200 m (open field)
Anti-masking	Active infrared
Radio signals	Alarm Low Battery (LWB) Supervision
LEDs	2 red LED (IR heads detection) 1 blue alarm LED
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 SCHEME



PARTS OF THE SENSOR



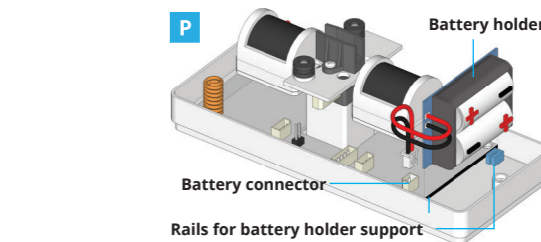
POWER ON

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), for example by placing it in the package. 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.

BATTERY

LOW BATTERY
When the battery is low, the sensor activates the LWB output. The battery level is visible via the VIEW SENSOR app.

- BATTERY REPLACEMENT**
- Disconnect the dead battery
 - Press the tamper for about 3 seconds (circuit discharge)
 - Connect the new battery



CAUTION
DANGER OF EXPLOSION IF THE BATTERY IS REPLACED WITH ANOTHER TYPE. DISPOSE OF USED BATTERIES FOLLOWING THE INSTRUCTIONS.

THE ESTIMATED DURATION OF THE BATTERY OF THE SENSOR IS PROPORTIONAL TO:

- THERMAL CYCLE OF HEATING AND COOLING THE BATTERY THAT ALTER THE CAPACITY AND AUTONOMY OF THE CHARGE
- WORKING TEMPERATURE TO WHICH THE BATTERY OPERATES (EX.: AT TEMPERATURES LOWER THAN 0 °C THE DURATION OF THE BATTERY CAN REDUCE UP TO 50%)
- NUMBER OF SENSOR DETECTIONS: IF THE SENSOR IS INSTALLED IN HIGH FREQUENCY PASSAGE ZONES, THE BATTERY AUTONOMY IS DRASTICALLY REDUCED

RADIO PAIRING

To perform the sensor learning, the following operations must be performed:

- Power up the sensor
- Wait for the end of the sensor initialization phase
- Close the JUMPER ANTI REMOVAL (if it is open)
- Prepare the control unit in "Add radio devices"
- Place the DIP8 in the ON position
- Press the TAMPER microswitch and check that the control unit detects the sensor (press again in case of no reception)
- At the end of the operation return the DIP8 to the OFF position

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 dials 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 DIP 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
RADIO PAIRING	ENABLED	DISABLED
REMOTE PROGRAMMING	ENABLED	DISABLED
QUIET TIME	ENABLED	DISABLED
AND/DIRECTIONAL AND	DIRECTIONAL	AND
ANTI DISTURBANCE	ENABLED	DISABLED
ANTIMASKING	ENABLED	DISABLED
WALK-TEST LOWER IR	ENABLED	DISABLED
WALK-TEST UPPER IR	ENABLED	DISABLED

DIP8 - RADIO PAIRING

DIP8 = ON SENSOR IN PAIRING MODE

Activate this mode to learn the sensor in the control panel. See the chapter "LEARNING" for details. This mode must be enabled only during the learning phase. The sensor cannot detect when it is learning.

DIP8 = OFF SENSOR IN NORMAL OPERATION

Always keep DIP8 in OFF during normal sensor operation

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

SUPERVISION

The sensor regularly sends a "presence" code.

The central panel and / or the receiver (if enabled) constantly check this "presence" of the sensor: if they do not receive this code they will activate the "failed supervision" warnings. The supervision on the sensor is always enabled, to disable it set the control panel.

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 (IR) is enabled. After closing the cover the upper RED LED lights up to indicate the status of WALK-TEST IR. 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 MW. 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.

The 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.

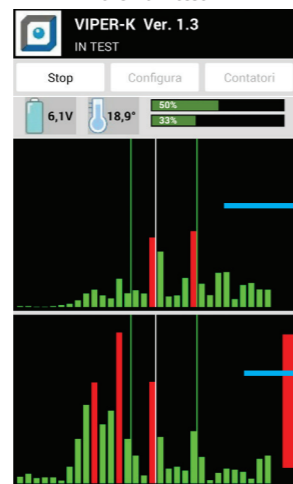
VIEW SENSOR

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 **VIEW 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.

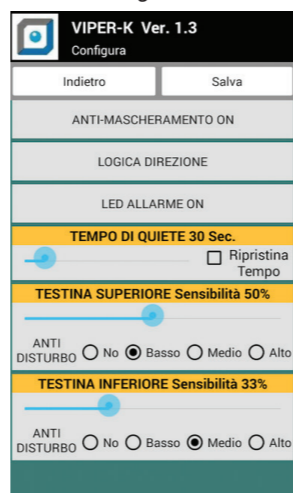
Example of a mobile screen during the walk-test



Signal level at the upper head

Signal level at the lower head

Example of a mobile screen during configuration



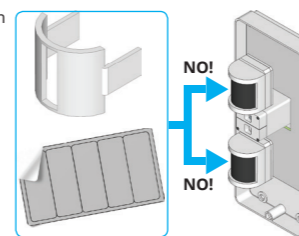
DIP4 - ANTIDISTURBANCE

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!

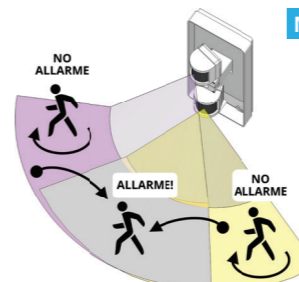


DIP5- AND/DIRECTIONAL AND

AND (DIP5 = OFF)

The sensor goes into 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 of crossing area.

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

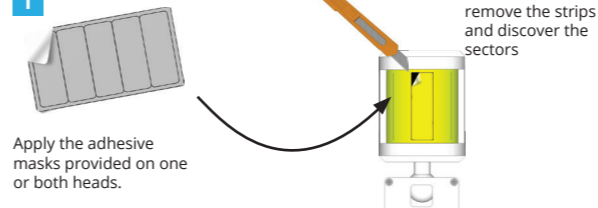
In some situations the detection area may be too large, becoming a potential source of problems if there are tree branches, curtains, windows, etc. in the area to be protected. It is possible to reduce the detection area of the IR head by masking the beams with the supplied accessories, leaving free to detect only those oriented in stable areas of the area to be protected.

! When using the lens cap or adhesive mask pay attention to the use of the "CROSSING FILTER" function!

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.

I



Apply the adhesive masks provided on one or both heads.

DIP6 - QUIET TIME

Through **DIP6** it is possible to activate the TIME OF QUIET between two measurements:

- DIP6 = OFF** The sensor transmits / signals alarm at each detection.
- DIP6 = ON** After an alarm the sensor suspends the sending of the subsequent alarms for the "quiet time", about 30 seconds.

WARNING: during the quiet time, no detection must take place, otherwise the count will restart; if the quiet time ends without detections the sensor reactivates, otherwise the sensor will reactivate, however, always after 5 minutes. We recommend setting the quiet time because it allows longer battery life.

When the sensor is programmed via software (DIP7 = ON), the quiet time can be set at different values and with greater elasticity.

DIP7 - REMOTE PROGRAMMING

Select whether the sensor uses the hardware settings (trimmers and DIPS) when in OFF, or those sent 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

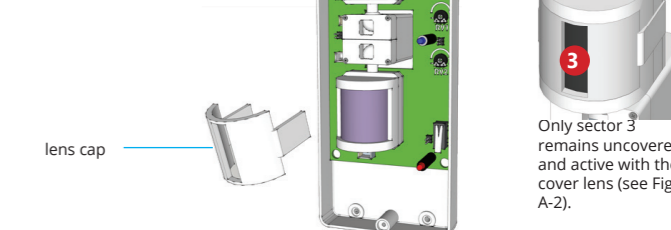
IF YOU DO NOT USE THE SOFTWARE CONFIGURATION SYSTEM, ALWAYS LEAVE THE DIP7 IN THE OFF POSITION

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 cap.

Check that the straps are well stuck in their seats!



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.

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Made in Italy
 This manual may be subject to change without notice

CE EU Declaration of Conformity Hereby, DUEVI declares that the radio equipment outdoor sensor VIPER-R is in compliance with Directive RED 2014/53/EU. The full text of the EU Declaration of Conformity is available at the internet address www.duevi.eu

Pursuant to Legislative Decree No. 49 of March 14, 2014 "Implementation of Directive 2012/19 / EU on waste electrical and electronic equipment (WEEE)". The crossed bin symbol on the equipment indicates that the product at the end of its useful life must be collected separately from other refusals and conferred at suitable waste collection centers for electronic and electrotechnical. The illegal disposal of the product by the user involves application of administrative sanctions referred to in Legislative Decree n. 49 of 14/03/2014.