MONOLITH SERIES-K

MONOLITH: standard device 2 pir
MONOLITH DT: device with microwave



INSTALLATION AND USE MANUAL

22.04-M:1.0-H:SE-01VX-21-F:1.16

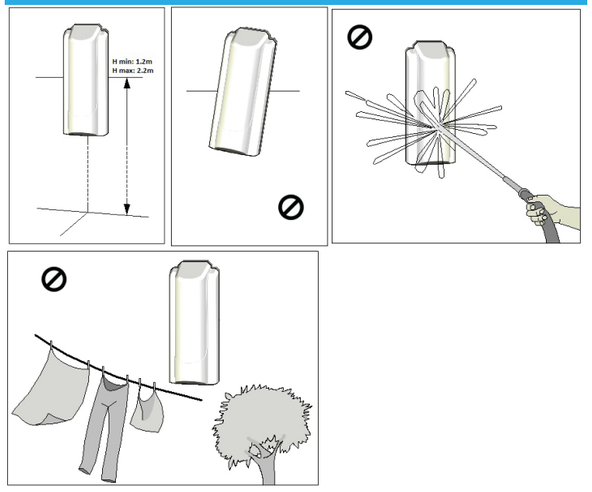
Monolith is our latest generation outdoor sensor, which allows you to obtain a high detection reliability even in critical environmental conditions, and it's very easy to install.
Monolith supports the innovative Walk Test and Wireless Programming System, composed from the VIEW SENSOR software and the BT-LINK-S module (not included).
The sensor has full 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.

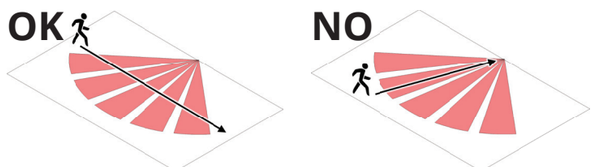
ONLY QUALIFIED TECHNICIAN MUST INSTALL THIS DEVICE. INSTALLER MUST FOLLOW CURRENT REGULATIONS.

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.

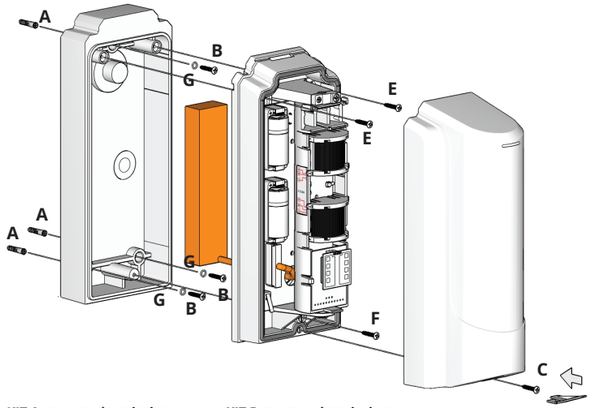
ATTENTION



IMPORTANT: THE SENSOR MUST BE INSTALLED SO THAT THE INTRUSION TAKES PLACE WITH THE CROSSING OF TWO PIR BEAM, AND NOT WITH THE APPROACH IN THE DIRECTION OF THE SENSOR. THIS WAY A BETTER DETECTION IS ACHIEVED.



WALL MOUNTING



KIT A content description:

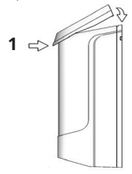
A) 3 Fisher SX5 anchors
B) 3 Screws 3,5X35 TC
C) 1 Screw 2,9X16 TC
D) 1 Screw cover insert

KIT B content description:

E) 2 Screws 2,9X19 TF
F) 1 Screw 2,9X32 TC
G) 3 o-ring

Wall mounting instructions:

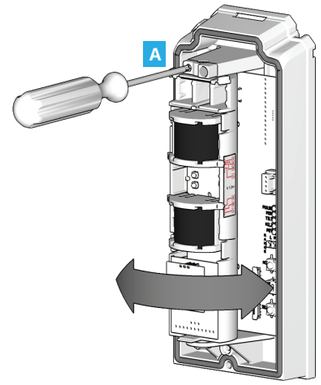
- Fix the sensor compartment to the wall with the appropriate plugs (**A**) and screws (**B**) equipped with O-RING (**G**)
- Insert the transmitter into the compartment and connect it to the sensor using the supplied cable.
- Screw the sensor to the sensor compartment using the screws (**E**) and (**F**).
- Close the sensor cover from top to bottom.
- Screw the screw (**C**) to lock the sensor cover.Inserire l'inserto coprivite (**D**).
- Insert the roof with the special joint as shown in the figure below.



Angular adjustment of the detection area

It is possible to adjust the point of view of the sensor by rotating the optical group.

- Unscrew the adjustment screw (A)
- Rotate the light assembly as necessary.
- Screw in the adjusting screw (A).



USCITE FILARI

Through the output cable it is possible to take all the contacts necessary for communications and powering the radio. The outputs are characterized by the following colors:

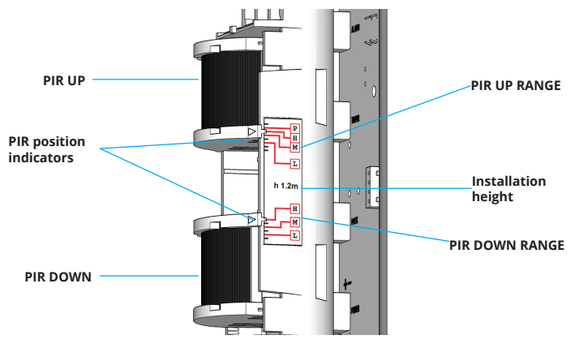
6V	:	RED
GND	:	BLACK
3V	:	ORANGE
ALARM	:	YELLOW
TAMPER	:	WHITE
MASKING	:	GREEN
LOW BATTERY	:	BLUE

CONTACTS OUTPUT
All the wired outlputs are N.C. type. potential-free (clean contact).
POWER SUPPLY FOR TRANSMITTER
It is possible to take the power supply needed by the transmitter through the supplied connector. Two voltages are available: 3V and 6V. Unused cables must be made in a condition not to generate unwanted contacts.

DETECTION DISTANCE ADJUSTMENT

Monolith can be installed at any height between 1.2m and 2.2m.
Depending on the installation height, the heads must be positioned using the indications on the sensor and set the setup in the appropriate range of use.
The 1.2m installation is the only one that also allows you to take advantage of the pet immune mode. To make installation easier, the sensor indicates where to place the heads for the two limit installation heights.
ATTENTION: *The sensor is optimized for installation at 1.2m, for higher heights there could be the limitations described below.*

INSTALLATION AT 1.2m NO PET:
This is the most effective installation and must be used in the absence of pets.
INSTALLATION AT 1.2m WITH PET IMMUNE:
In pet immune mode the sensor does not generate alarms caused by small animals (height maximum 80cm). This mode must be activated by setup, and requires that the pir at the top is positioned in position P. This type of installation is not recommended in the absence of animals as the degree of protection is lower.
INSTALLATION AT 2.2m:
This type of installation offers a lower degree of protection, because the minimum distance of detection is ~ 4m.
OTHER INSTALLATION HEIGHTS:
If it is necessary to mount the sensor at a different height, intermediate positions can be used for the heads (indicated on the sensor in black color), lowering the heads, the sensor will have a smaller range.



ATTENTION: There are two labels depending on the desired installation height (1.2m and 2.2m), one on the right side and one on the left side of the sensor. Place the heads following the directions of the appropriate label. For height installations differently, refer to the chapter "OTHER INSTALLATIONS", page 6

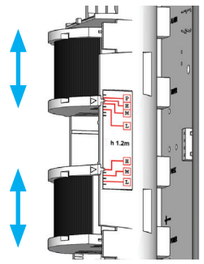
Detection distance adjustment:
Once the height and type of installation have been defined, the heads must be positioned according to the distance to be protected (L / M / H) in order to optically limit the detection.
Set the heads by looking at the indications on the sensor, left or right side depending on the installation height:

P: pet immune mode (1.2m height mount only)
L: to detect up to 5m
M: to detect up to 10m
H: to detect up to 15m

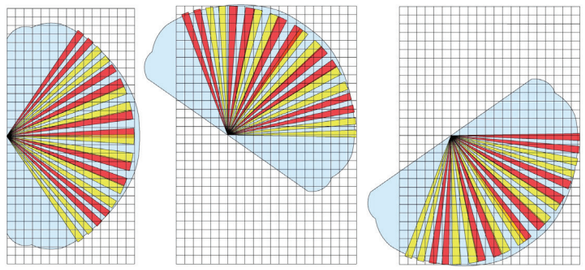
In the setup, in addition to the L / M / H positions indicated on the sensor, there is also the possibility to set the RANGE in order to introduce a non-optical attenuation of about 30%, using the range REDUCED L / M / H (see SETUP section). You MUST set the RANGE in setup equal to the position heads (L / M / H).

To install between 1m and 1.3m Pet Immune (RIGHT LABEL):
Place the upper head in position P.
Place the lower head in the desired RANGE (L / M / H).
In the setup: disable the H2.2 setting, set the L / M / H RANGE as the heads (also in reduced mode), enable the PET function.
To install between 1m and 1.3m NO Pet Immune (RIGHT LABEL):
Place the upper and lower heads in the same position (L / M / H) according to the desired flow rate.
In setup: disable the H2.2 setting, set the L / M / H RANGE (even in a reduced way) like the heads, disable the PET function.
To install between 2m and 2.2m (LEFT LABEL):
Place the upper and lower heads in the same position (L / M / H) according to the desired flow rate.
In the setup: enable the H2.2 setting, set the L / M / H RANGE (even in a reduced way) like the heads. The PET function cannot be enabled.
For installations between 1.3m and 2m:
If it is necessary to mount the sensor at a height other than those indicated on the sensor you can also use the intermediate positions of the heads (indicated on the sensor in color black). Remember that by lowering the head, the sensor will have a shorter range, while when it get up the range increases.

Distance adjustment detection: move the head along the vertical axis, taking it by the ends.



DETECTION AREA



CENTRAL POSITION | **LEFT END OF STROKE POSITION** | **RIGHT END OF STROKE POSITION**

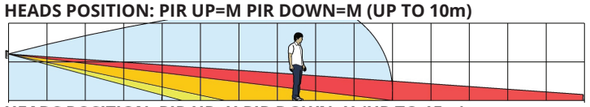
ATTENTION: The central position and the end-of-stroke positions are indicated in the diagrams right and left. All intermediate positions are possible by locking the optical unit in the desired position.

Detection area with 1.20m NO PET installation

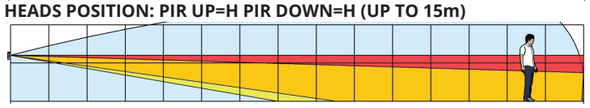
HEADS POSITION: PIR UP = L PIR DOWN = L (UP TO 5m)



HEADS POSITION: PIR UP=M PIR DOWN=M (UP TO 10m)

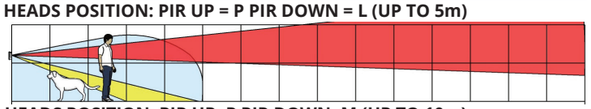


HEADS POSITION: PIR UP=H PIR DOWN=H (UP TO 15m)



Detection area with 1.20m PET-IMMUNE installation

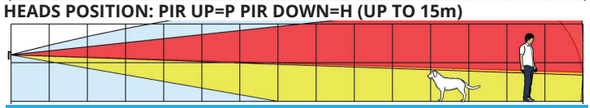
HEADS POSITION: PIR UP = P PIR DOWN = L (UP TO 5m)



HEADS POSITION: PIR UP=P PIR DOWN=M (UP TO 10m)

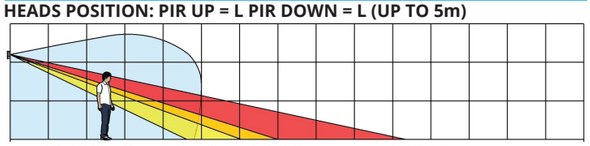


HEADS POSITION: PIR UP=P PIR DOWN=H (UP TO 15m)

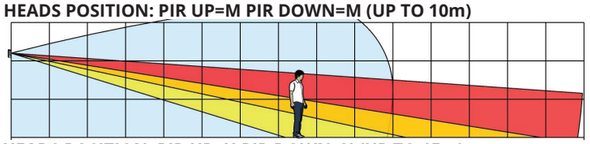


Detection area with 2.20m installation

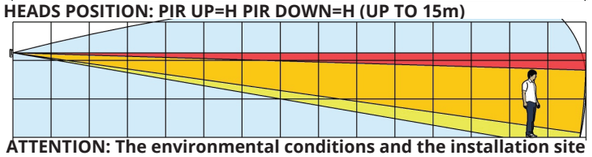
HEADS POSITION: PIR UP = L PIR DOWN = L (UP TO 5m)



HEADS POSITION: PIR UP=M PIR DOWN=M (UP TO 10m)



HEADS POSITION: PIR UP=H PIR DOWN=H (UP TO 15m)



ATTENTION: The environmental conditions and the installation site may slightly affect the indicated flow rates.

SENSOR STARTUP

Power up: the sensor enters the “initialisation” phase. The detection LEDs flash alternately for 60 seconds. At the end of stabilization, the LEDs turn off and the sensor can be used.

SETUP MANAGEMENT

To view and modify the setup use the SELECT and MODE buttons, the buttons must always be pressed for at least the necessary time declared and then released; a beep warns of correct execution.
The first time you press SELECT you enter setup and the current values are displayed, with further presses of SELECT you can select the item to be changed and with MODE the modification is carried out; press SELECT and MODE together to store the new setup.
The setup is always active for 30 seconds from the last press of a button, then goes to timeout and it stops.

To view the setup without making any changes:

1. Press SELECT (1Sec) to enter setup, the leds light up and display the current setup
2. To finish, you can wait for the timeout to exit setup (30S) or close the tamper of the cover.



To modify the setup it is advisable to first identify the position of the first item to be changed by referring to the list below.
When editing, remember that after 30sec. from the last press of a key, the setup exits due to timeout, and therefore the not saved variations are lost.

To change the setup:

1. Press SELECT (1Sec) to enter setup, the leds light up and display the current setup.
2. Press SELECT again (200mS) the first modifiable value (BLUE LED) flashes quickly, if you need to modify it, skip to point 4.
3. Press SELECT again as many times as necessary to reach the item to be changed, a rapid flashing shows the item you are positioned at; when you reach the last item, you start from the first again (BLUE LED).
4. When you reach the item to be changed, press MODE (200mS) one or more times until the desired value is obtained.
5. To change other items, start again from point 3.
6. Once the modifications have been completed, save the data by pressing SELECT and MODE together, an acoustic signal warns of the success and the setup stops.





- **ALARM LED: ON** = alarm led enabled, **OFF** = alarm led disabled
- **PULSE:** number of pulses, **OFF** = 1, **flashing** = 2, **ON** = 3.
- **MSK:** anti-masking, **ON** = active, **OFF** = inactive.
- **TILT:** anti-removal, **ON** = active, **OFF** = inactive.
- **H2,2:** mounting height, **ON** = 2.2m, **OFF** = 1.2m.
- **PET:** pet immune, **ON** = enabled, **OFF** = disabled.
- **RANGE L: ON** = L, **flashing** = L reduced.
- **RANGE M: ON** = M, **flashing** = M reduced.
- **RANGE H: ON** = H, **flashing** = H reduced.

ALARM LED:
The blue alarm LED positioned near the heads, if activated, turns on at each alarm.

PULSE:
Determines the number of pulses needed to establish the alarm event. We recommend to set a higher number of pulses in critical environmental conditions, for example in presence of oscillating vegetation, or adverse weather conditions.

MSK:
The anti-masking device protects the sensor 24 hours a day, in case the sensor is covered to prevent detection. Anti-masking does not work without the cover on the sensor.
The MASK alarm is activated if the masking persists for more than three minutes.
The anti-masking protection is always active. Respect an area of about 30 cm in front of the sensor where people must not stand. Also do not leave near the sensor, opened doors, hanging clothes or furnishing elements.
The anti-masking function is active with ambient temperatures above 0 ° C.
Through VIEW-SENSOR it is possible to extend the operating temperature of the anti-masking to values below 0 ° C.

H2,2:
To be activated in case of installation higher than 1.3m.

TILT:
The TILT is the removal protection system and protects the sensor 24h / 24 in case you want to try to remove it from the installation location. The detection takes place through motion sensor (accelerometer) or via rear button.

PET:
With the LED on, the sensor is in pet immune mode, needed if small animals are present.

RANGE:
Through the RANGE setting, the sensitivities of the heads are set. This setting must be consistent with the positioning of the heads. The selectable options are the followings:

- **REDUCED RANGE L:** the sensor detects up to about 3m (FLASHING LED)
- **RANGE L:** The sensor detects up to about 5m (LED ON).
- **RANGE M RIDOTTO:** the sensor detects up to about 7m (FLASHING LED)
- **RANGE M:** led ON the sensor can detect up to a maximum of about 10m
- **RANGE H RIDOTTO:** the sensor detects up to about 12m (FLASHING LED).
- **RANGE H:** led ON the sensor can detect up to a maximum of about 15m.

FACTORY DEFAULT SETTINGS

The sensor has the following setup, at the first start:

ALARM LED:	OFF
PULSE:	1
MASK:	ON
Masking disabled below 0 ° C:	ON *
Antimasking sensitivity:	LOW **
TILT:	ON
TILT sensitivity:	LOW *
H2,2:	OFF
PET:	OFF
RANGE:	M

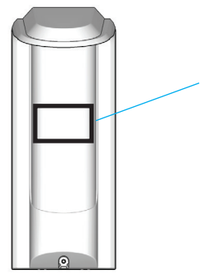
*Values marked with an asterisk can only be changed via VIEW SENSOR.
It is possible to restore the sensor to the factory settings by holding down the MODE and SELECT buttons at the same time as the sensor starts up until the confirmation beep is heard (a few seconds).

LEDS INDICATIONS

Monolith is equipped with three distinct leds for various signals. The light signals are all active in WALK TEST, while in normal operation it is only possible to activate the LED alarm via setup.

LUMINOUS SIGNALS:

- RED LED: PIR UP ALARM
- GREEN LED: PIR DOWN ALARM
- BLUE LED: SENSOR ALARM / MICROWAVE CONFIRM



LEDS AREA

DIPS SWITCH

DIPS SWITCH functionality:

- **DIP1: ON**=Walk test active, **OFF**=walk test disabled.
- **DIP2: ON**=Alarm grouping active. **OFF**=no alarm grouping. With alarm grouping active all tampering alarms (tamper, masking, tilt) are reported via the TAMPER terminal.

DIP 1 WALK-TEST:
By the **DIP 1**, the WALK-TEST is enabled which is used to verify the correct adjustment of the heads. Once the dip is set to **ON**, close the cover and perform steps in front of the sensor at the desired distances by observing the signaling LEDs positioned near the heads:

RED LED: the upper pir head has detected.
GREEN LED: the lower pir head has detected.
BLUE LED: indicates the alarm event generated by the detection of all the heads. In the sensors MONOLITH DT the alarm includes the detection of the microwave.

If the WALK-TEST does not give the desired results, proceed with the necessary adjustments, included the vertical and horizontal adjustment of the heads, and if necessary the variation of the RANGE in setup. Repeat the operation several times, until the desired results are achieved. The sensor exits the WALK-TEST for TIMEOUT after about 15 minutes.

ATTENTION: *During the WALK-TEST the sensor does not send tamper alarms but only the detection alarm. If the sensor exits for TIMEOUT, dip 1 remains on, each time the cover is removed and put back on, the sensor returns to walk test. To avoid this, move the dip 1 to off at the end of the WALK-TEST operation.*

DIP 2 ALARM GROUPING:
With active alarm grouping, all tampering alarms (tamper, masking, tilt) are signaled via the TAMPER output. When disabled, the sensor uses all the outputs dedicated to signals.

TAMPER PROTECTION

The sensor is protected from tampering attempts by three controls: anti-opening cover, anti-removal and anti-masking.

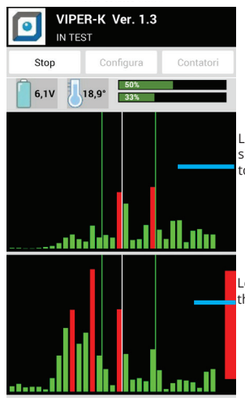
ANTI-OPENING
Protection against opening the sensor cover.

ANTI-REMOVAL
Protection against removal from the installation position. Protection can be either via accelerometer, or via rear switch depending on the model.
To include / exclude this protection, use the SETUP via the TILT setting.

VIEW SENSOR

VIEW SENSOR is the innovative application developed on the 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 to protect, minimizing improper alarms. The application allows you to perform a completely innovative walk-test: via wireless connection it is possible to 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 manually intervening.
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 afterwards it is removed for reuse on other sensors.

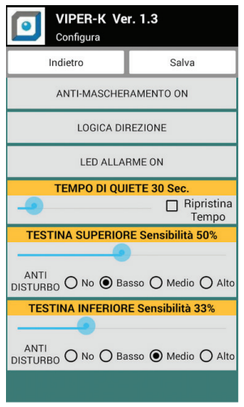
Example of a mobile screen during the walk test



Level of signal in the top head

Level of signal in the lower head

Example of a mobile screen during setup



BATTERY

LOW BATTERY
When the battery is low, the sensor activates the LWB output.

REPLACING THE BATTERY

- Remove the exhausted batteries
- Wait at least 30 seconds for the sensor to discharge
- Insert the new batteries

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

TECHINCAL SPECIFICATIONS

DEVICE	MONOLITH K	MONOLITH DT K
Detection method	Passive infrared	Passive infrared & microwave 24GHz
Current consumption	stand-by=8uA alarm=5mA	stand-by=11uA alarm=5mA
Battery life (estimated*)	4 years	4 years
PIR coverage	15m, widht 90°, 10 zones	
Distance limit	da 2,5m a 15m 6 levels	
Detectable speed	0,3-2 m/s	
Power input	6V DC, 2 CR123 batteries	
Alarm period	>2sec	
Warm-up period	Approx. 60 sec (LED blinks)	
Alarm output Tamper output Masking output Low battery output	OptoMOS N.C. *(the outputs open in the event of an alarm and power failure)* Max 40 V_{DC} / 100 mA	
LED indicator	RED LED: detection IR UP GREEN LED: detection IR DOWN BLU LED: alarm/detection MW	
Operating Temperature/Environment humidity	-40 ÷ +70 °C / 95 % (relative)	
Mounting height	100 ÷ 220 cm	
Detection Area	Max 15 m three levels: L, M, H. 100° radial opening for every head	
Head regulations	L: detection untill 5m M: detection untill 10m H: detection untill 15m	
Antimasking	Active infrared	
Body / IP Grade / IK Grade	ABS antiUV / IP54 / IK10	

* Average estimated with 10 activations-alarms / day + supervision

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.