

# POWER & CONTROL

## NEW DETECTORS OutSpider



**Perimeter Detectors**

**AUS electronics**  
ALARM AND FIRE INTEGRATED  
SYSTEMS



# Spider OutSpider

Spider and OutSpider constitute the outdoor and indoor line of passive detectors that AVS Electronics has developed to satisfy the most different market requests.

The line is made of detectors able to vary the range from a few metres up to over twenty metres. The coverage zone can be modulated depending on the context, passing from 90° to coverage with curtain effect and installation heights that vary from 1 metre up to 2.70 metres. All this enables to always install the most performing product for a certain environmental context. The extreme flexibility of Spider o and OutSpider, combined with two different detector analysis technologies, analogical or digital, make the product ideal for the protection of highly at risk sites, industrial and civil.

- **ANALOGICAL** outdoor detectors **Spider**
- **DIGITAL** outdoor detectors **OutSpider**

## DIGITAL OUTDOOR DETECTORS

**OutSpider** represents the new series of passive detectors with digital technology developed by AVS Electronics, for the realisation of outdoor zones protections, in an extremely flexible and efficient manner. Conceived from the ten-yearly experience of AVS Electronics in the realisation of equipment for the outdoor perimeter protection, and it is studied to answer the safety request in civil, industrial, commercial and military sites. Its particular versatility also makes it suitable for indoor protections in large commercial or industrial activity. OutSpider is proposed in 3 different models allowing the installer to choose the technology closest to the requirements of the zone to be protected.



### OutSpider PA WS

Also available in the wireless version: OUTSPIDER PA WS.

### OutSpider PA

Dual infrared passive with Fresnel lens with 90° coverage with variable range between 15 and 23 m and installations between 1 m and 2.70 m; all this thanks to the possibility of choosing among the 4 available lens.

The detector safety is guaranteed by an efficient active infrared protection system able to monitor 100% of the lens surface. This control enables to distinguish and signal the masking attempts, from the normal wear of the detector leading to the progressive decrease in efficiency of the same given the depositing of dust. Two individual outputs allow the immediate identification of the type of problem in progress. The provided bracket guarantees maximum adjustability on the horizontal and vertical pattern and allows the safe and simple passage of cables. The particular technical solution with dual interchangeable cover enables the installer to choose, depending on the environmental context, among two different protection degrees against atmospheric agents.



### OutSpider DT

It is the result of the huge experience of AVS Electronics in designing outdoor microwaves that, thanks to the development of a particular management technique studied for this type of equipment, is able to generate the functioning of two individual microwaves.

The integration between the dual infrared passive and the dual microwave channel, allows us to affirm that OutSpider DT can be considered a detector with 4 sections (2 PIR - 2 MW) in AND between them. A powerful microprocessor, of latest generation, is able to perform complex analysis guaranteeing maximum reliability in extreme functioning conditions. The detector safety is assured by an efficient active infrared protection system able to monitor 100% of the lens surface. This control enables to distinguish and signal the masking attempts, from the normal wear of the detector leading to the progressive decrease in efficiency of the same given the depositing of dust. Two individual outputs allow the immediate identification of the type of problem in progress. The great installation flexibility is guaranteed by the provided bracket, enabling maximum adjustability on the horizontal and vertical pattern and the safe and simple passage of cables. Coverage is of 90° with variable range between 15 and 23 m and installations between 1 m and 2.70 m; all this thanks to the possibility of choosing among the 4 available lens. The dual interchangeable cover enables the installer to choose, depending on the type of environmental context, among two different protection degrees against atmospheric agents.

### OutSpider DT WS

The concreteness of the dual infrared and dual microwave detection, combined with the flexibility of radio communication of the signals, enables installing this model regardless of the wire arrangements that are often hard to realise for the outside. A large range lithium battery and the innovative controlled activation management of the dual microwave, reduce the detector consumption to a minimum, making it particularly interesting and reliable in time. With regard to coverage, capacity and installation that described for OutSpider DT is valid.



## INSTALLATION

Flexibility and safety are the main elements of the OutSpiderline. The experience gained in years of designing outdoor infrared protections has enabled the development of a series of technologically advanced lens; 4 distinguished lens depending on the type of installation. Particular attention was given to the analysis of interferences caused by animals; OutSpider manages to discriminate the intrusion of medium sized animals (up to approx. 70 cm of height). Possible installations:

- 1 Lens (wide angle):** coverage 90°, range 15m, installation height between 220 cm and 270 cm.
- 2 Lens (animal alley):** coverage 90°, range 15m, 120 cm installation height.
- 3 Lens (long range):** curtain effect coverage, range 23m, installation height between 220 cm and 270 cm.
- 4 Lens (barrier lens):** curtain effect coverage, range 15m, installation height between 220 cm and 270 cm.

The different dip-switch configurations for the dual passive infrared and the micrometer adjustment of the microwave, make calibrating the detector totally simple and precise. The HPWIN software enables connection with the detector and is able to simulate a real and proper oscilloscope on PC that displays the signals coming from the 2 PIR channels and the 2 MICROWAVE channels, verifying the presence, or not, of interferences in the field. It also enables to carry out the necessary calibrations through USB connection or RS485 serial connection.

## SIGNAL ANALYSIS

The digital technology enables the continuous analysis of all information coming from the individual sections of the OutSpider; higher, lower infrared and the two microwave channels.

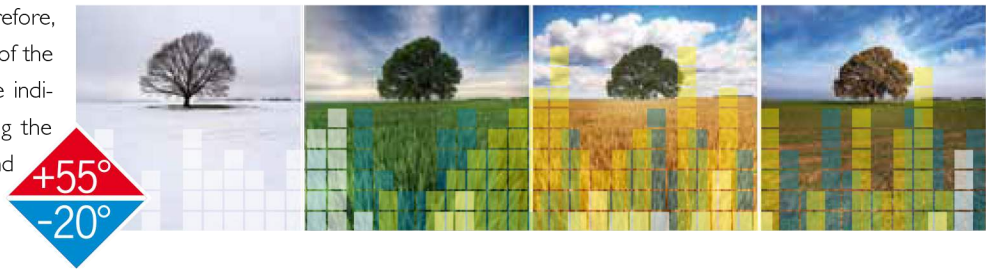
The microprocessor allows fast and precise signals analysis. The shape of the various signals, the size and flow are the elements that will be considered during microprocessor checks, before signalling the real and proper alarm. The alarm is registered on an archives-database where the installer can find again the information required among 1900 events kept in memory and saved with date and time.

## DATABASE



## ENVIRONMENTAL CHECK

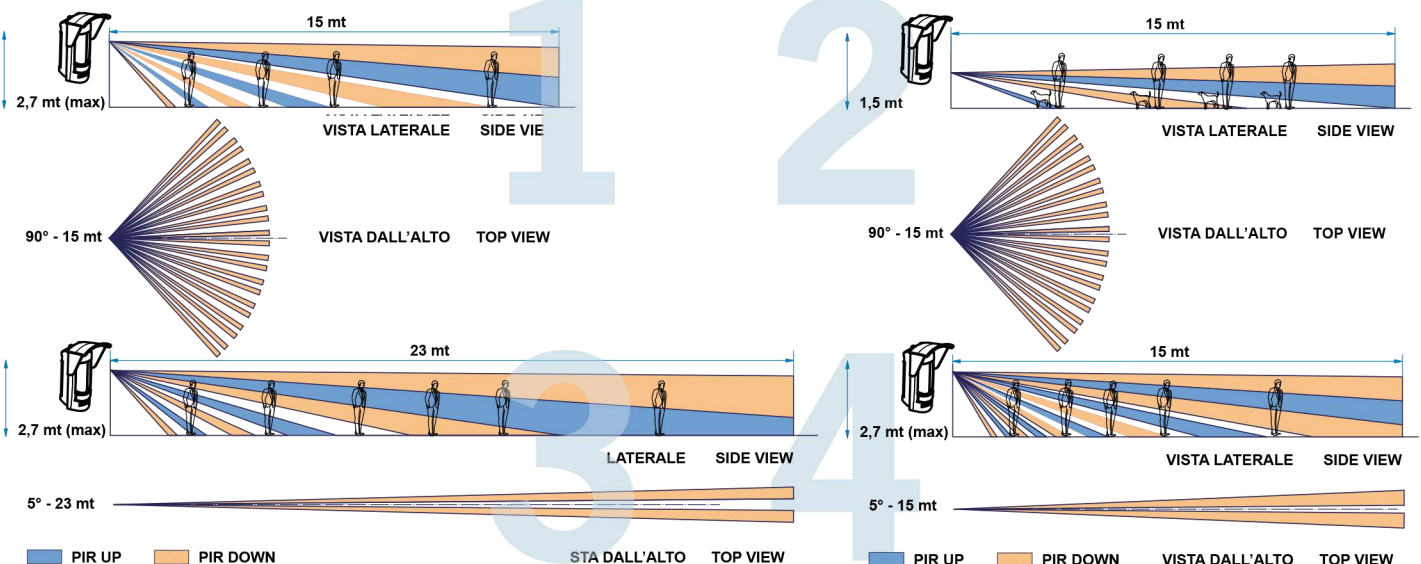
OutSpider is attentive to environmental variations, it is able to detect all temperature oscillations. This is an important data and is managed dynamically by the microprocessor that carries out threshold corrections necessary to maintain the reply of the passive infrared constant. The seasonal temperature ranges are a critical factor in infrared detectors, the digital technology correlated with a particular analysis carried out by the microprocessor, allows maintaining the detector's yield unvaried and, therefore, the reliability of the same. The alarm signals of the detector are archived and the temperature indication is an important data entered among the monitored parameters, this to understand whether the detector is working within the established ranges.



## FUNCTIONING MODALITY

**Infrared only versions** (OutSpider PA / OutSpider PA WS): OutSpider works in AND, meaning both sections of the infrared must detect for the alarm to be generated.

**Infrared and microwave versions** (OutSpider DT): OutSpider works with quadruple AND, meaning both the infrared sections and the two microwave sections must detect the overcoming of the set thresholds.



A series of optimised functions for managing the outdoor environment are available for the entire OutSpider line.

### **INFRARED and SCP Function** (Signal Correlation Processing)

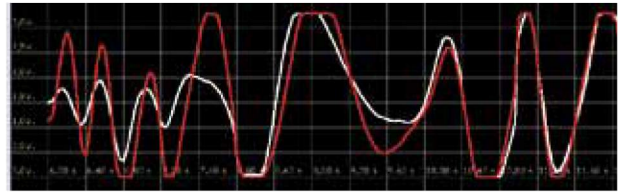
The digital analysis of the signal of the two PIR allows carrying out continuous correlations and generate the alarm depending on the settings. It is possible to select two reply modalities of the detector; through the dip-switches:

- **Standard functioning:**

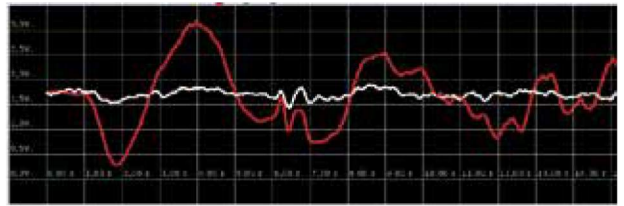
when the signal overcomes the set thresholds for the two OutSpider sections, it generates the alarm.

- **Functioning with correlation (SCP):**

the digital signals of the two sections are continuously compared between them and the alarm is generated only when the wideness, the duration and the waveform are homogenous between the two sections. This technique allows discriminating the alarms caused by elements individually interfering with the two PIR. Example: a transiting animal disturbs the lower section, whereas shrubbery/hedges disturb the upper section; this situation does not generate the alarm.



With active SCP function: the signals of the two PIR are homogenous; the alarm is triggered off



With active SCP function: the signals of the two PIR are not homogenous; no alarm is triggered off

### **MICROWAVE and SCP Function** (Signal Correlation Processing)

The planar microwave of OutSpider doubles its efficiency. A particular management technique allows analysing the area to protect with two individual frequencies inside the band defined for the safety equipment.

A continuous correlation between the generated signals, allows the microprocessor to understand the direction of the intruder's movement. This opportunity has enabled to develop a particular function defined **SCP** that allows distinguishing whether an object is transiting or oscillating.

The oscillating objects will not generate alarms, making the system able to discriminate those movements typical of trees, branches, hanged clothing, signs in the presence of wind, etc.



## OPTIONAL INPUT

OutSpider has the possibility of managing an optional input. This input allows the connection of a detector directly on to the electronic board using the dedicated clamp (AUX). The status relating to this input will subsequently be reported to the alarm relay exchange or sent in RS485, directly to the dedicated satellite.

## 360° SAFETY

OutSpider poses particular attention in the **24/7 protection** of the large size lens, to avoid sabotaging attempts.

The active infrared technology, with which OutSpider analyses every section of the Fresnel lens, allows distinguishing attempts of **detector masking** from the lens and inevitable **decrease of the equipment's yield** in time.

Two individual signals allow identifying the different information; **anti-masking output – lens fault output**, enabling the user to choose times and methods of intervention.



## MECHANICAL STRUCTURE

The detector's structure allows choosing the most suitable solution to the context to be protected. The detector has two individual covers available, one studied for indoor installations or not fully exposed to bad weather, and a second with roof suitable for outdoor situations. A particular gasket directly melted on to the cover allows a perfect seal against the atmospheric agents. A metal fixing bracket is available for wall installations with quick couplings; for particular installations, for height or for the need of adjusting the detector; it is possible to use a robust joint complete with anti-tamper device. A slot for a camera independent from the detector is arranged; an always watchful and discreet eye on the protected environment.



## ENVIRONMENTAL-COMPATIBILITY

AVS Electronics continues its commitment in the production of an environmental-compatible security. The use of low environmental-impact rough-material with the lowest possible number of pollutant minerals and the highest possible use of recycled material, the research for a low-consumption product, the reduction of the passages-chain from manufacturer to consumer, are the elements of our commitment for a cleaner world.





The new perimeter detector  
responding to your security expectations.



## OutSpider digital system INTERACTIVITY

The digital peripherals have different opportunities available for signalling their status.

We can identify three different methods to make the information available to the installer:

- 1 O.C./free exchange outputs that make the product universally compatible: alarm - tamper - OC. "lens fault" - OC. anti-masking
- 2 USB connections with a computer connected in loco that, through the HPWIN dedicated software, allows analysing the status of the peripheral, carry out the calibrations necessary to optimise the functioning
- 3 RS485 connection between the peripherals (OutSpider) and a universal satellite electronic board for AVS integrated systems and non. This type of connection, using only 4 conductors, allows reading all signals coming from the field peripherals, enabling the remote management of the system, both on PSTN and GSM lines.



## OutSpider ACCESSORIES

The **XSATHP** satellite has the possibility of managing up to 16/32 appliances directly connected to serial **RS485**.

The information relating to the connected peripherals can be displayed by means of the 8/16 (\*) transistorised outputs found on electronic board XSATHP, or they can be transferred in RS485 to the control units of series Xtrema. XSATHP has 4 balanced inputs available for the connection of traditional detectors. The satellite is complete of PSTN or GSM (optional with electronic board mod. XGSM) telephone interface, enabling remote connections for the displaying in real time of the status; in addition, it is possible to also remotely carry out all adjustments on the peripherals.

**NOTE:** \* 16 outputs only with optional electronic board **XOC8** model.



**BRACKET:** **SB 120:** floor standing bracket **SB 130:** buried bracket

**SP-OUT:** bracket for pole mounting **SM-OUT:** wall bracket for 90° installations **ST-OUT:** adapter for wall tubes coupling

### CHART OF THE TECHNICAL FEATURES OF XSATHP

Type of accessory	MAX Num.	PRODUCT	SUPPLYING	CONSUMPTION	SIZE mm	BATTERY	WEIGHT gr.
Satellite	N°32	XSATHP	12V dc	250 mA	230 x 140 x 25	-	-
Outputs extension (optional)	N° 1	XOC8	12V dc	5 mA (Max)	58 X 35 x 25	-	25
Zone inputs	4 balanced inputs						
PSTN dialler	INTEGRATED						
GSM dialler (optional)	N° 1	XGSM	12V dc	400 mA (Max)	93 x 15 x 60	-	47
Supply unit (optional)	N° 1	PW3	220V – 12Vdc – 3.4A	1.3A/115V~ 0.8A/ ~	-	Up to 17 Ah	-
		PW5	220V – 12Vdc – 5.1 A	2A/115V~ 1.2A/230V~	-	Up to 17 Ah	-
Accessories (optional)		XMR2	12V dc	23 mA	30 x 45 x 20	-	-
		MR 4	12V dc	da 10 mA	85 x 50 x 30	-	80
		MR 8	12V dc	da 18 mA	90 x 75 x 30	-	85
Housing (opzionale)		CONXTREAM	-	-	330 x 420 x 107	Up to 17 Ah	-
		CONXTREAM-S	-	-	321 x 279 x 83	Up to 17 Ah	-

# HPWIN SOFTWARE for OutSpider

Thanks to the software from PC, it is possible to make the best use of the potentials of digital technology.

**HPWIN** allows, for every digital device:

**CHECK:**

- infrared and microwave signals
- outputs status (alarm – tamper — OC."lens fault"- OC. Anti-masking)
- input status (AUX)
- device diagnostic
- alarms history with over 3800 memorisations complete of: date - time – waveforms – working temperature
- devices status real time synoptic (if connected to satellite in RS485)
- signals recording archive on PC

**MANAGEMENT:**

- sensitivity adjustment
- infrared emission adjustment
- valid signal threshold adjustment
- signals recording
- select functioning mode:
  - AND of the 4 technologies
  - SECURITY (alarm for more consecutive alarm from a single technology)
- upgrade firmware (not active in PSTN/GSM)

These functions are active with USB connection in local, meaning directly connected on to the digital peripheral, or in USB on XSATHP satellite or PSTN/GSM telephone connection.

TECHNICAL FEATURES	OutSpider PA	OutSpider DT	OutSpider DT WS	OutSpider PA WS
Detection type	Dual Infrared channel	Dual Infrared channel Dual Microwave channel	Dual Infrared channel Dual Microwave channel	Dual Infrared channel
90° coverage 2.2 m height	15 metres	15 metres	15 metres	15 metres
5° coverage 2.2 m height (*)	15 metres	15 metres	15 metres	15 metres
5° coverage 2.2 m height (*)	23 metres	23 metres	23 metres	23 metres
90° coverage 1.2 m height (*) (+)	15 metres	15 metres	15 metres	15 metres
Installation height	From 1 m to 2.2. m up to 2.7 m			
Fixing bracket	Provided			
Immunity to animals (+)	Up to 70 cm			
Nominal voltage	12V	12V	With Lithium battery Dedicated	
Minimum voltage	11.5V	11.5V		
Maximum voltage	15V	15V		
Absorption in quiet	53 mA	55 mA	-	-
Absorption in alarm	67 mA	77 mA	-	-
Sizes: (D x W x H) cm	9.5 x 10.5 x 23.5			
Sizes with roof: (D x W x H) cm	13.5 x 14 x 24			
Lock input	by means of dedicated "B" clamp, it is possible to lock the alarm relay and the microwave functioning with system disarmed			
Auxiliary input	Negative input for detector			
Alarm output	exchange normally closed (C/NC)			
Antimask output	control exchange normally closed (C/NC): masking - anti-approach			
Lens fault output	Transistorised output for lens efficiency check			
Tamper output	exchange normally closed (C/NC)			
Radio frequency			FM 868 MHz	
Radio alarm signal			yes	
Radio antimask signal			yes	
Lens fault radio signal			yes	
Radio tamper signal			yes	
Low battery radio signal			yes	
Radio supervision signal			yes	
Walk test	Led and Buzzer			
Serial output – RS485	yes			-
USB Output	Yes - with optional cable mod. USB-OUT			
Selectable serial addresses	32			
Events memory	Up to 1920 events memorised with date and time - waveforms - working temperature			yes
Stop memorisation with system disarmed	yes			-
False alarms filter	yes			yes
Microwave work frequency	-	10,525 GHz (+/-20MHz)		-
Signal emitted by the microwave	-	impulse		-
Radiated RF power	-	< 14 dBm		-
Environmental conditions	from -20°C to +55°C			
IP Protection degree	IP 65			
Compliant RF Standard	yes			
(*)	Optional lens			

## ANALOGICAL OUTDOOR DETECTORS

The **Spider** line is made of four different models enabling the use of an equipment and, therefore, of the most suitable technology for the zone to be protected. Versatility, efficiency, reduction of false alarms are the main features of this line.

**Versatility** in installation means accepting less compromises between the protection expectations and the typical difficulties in realising outdoor protections.

**Efficiency** means installing the best technology, choosing from the 4 different models, the one that better adapts to the area to be protected and to the user requirements, with the aim of guaranteeing an excellent protection efficiency.

**The reduction in false alarms** represents an essential objective, in particular in outdoor applications: the combination of the different detection technologies allows for greater immunity to environmental interferences and a significant consequent reduction in false alarms.



SPIDER PA - SPIDER PA WS - SPIDER DUAL



### Spider PA

DUAL PASSIVE INFRARED DETECTOR FOR OUTDOOR, WITH MIRROR TECHNOLOGY.

It is made of two combined sections, so that the alarm must be caused by both. Furthermore, this particular solution enables eliminating false alarms caused by small animals and atmospheric events. An internal buzzer allows simplifying the coverage check during installation and can also be used for a functional walk-test. The upper section creates a protection zone, with a 90° opening, parallel to the pattern. Similar is also the lower section that, however, can be calibrated depending on the different coverage requirements. It is therefore possible to reduce the maximum range from 14 metres to 3 metres, by simply adjusting a graduated scale. Furthermore, it is possible to select the "Directional" function that, combined with detectors, allows determining the intrusion direction. With SPIDER PA it is possible to obtain the best protection efficiency and maximum guarantee against false alarms.

### Spider PA WS

Maintains the same features of the Spider PA model, integrating the "Via Radio" transmission module, compatible with satellites, universal receivers and the AVS Electronics control units; it is also possible to select two functioning modes, "Normal" and "Energy Saving", that allow increasing the autonomy of the battery.



### Spider DUAL

TRIPLE TECHNOLOGY OUTDOOR DETECTOR: DUAL PASSIVE INFRARED WITH MIRROR TECHNOLOGY + MICROWAVE.

The infrared section is made of two combined sections, the upper creates a protection zone, with 90° opening, parallel to the pattern. Similar is also the lower section that, however, can be calibrated depending on the different coverage requirements. The Microwave section protects the same zone controlled by the infrared, integrating the detection ability. The equipment's alarm is caused by the simultaneous detection of all three sections.

This particular solution enables eliminating false alarms caused by small animals and atmospheric events and particular light condition. An internal buzzer allows simplifying the coverage check during installation and can also be used for the functional walk-test. Furthermore, through the microwave, it is possible to have the ANTI MASKING function to signal any sabotage of the detector.

The maximum range can be easily reduced from 14 metres down to 3 metres, by simply adjusting a graduated scale.

### Spider ACTIVE

DUAL BEAM ACTIVE DETECTOR FOR OUTDOOR.

The barrier is made of a transmitter and a receiver with double combined beams. The alarm is caused when there is a continuous interruption of the two beams, during a set reply time, enabling the elimination of eventual false alarms caused by the passing of small animals. The maximum range is of 40 metres, also guaranteed in extreme situations by an Automatic Gain Control system enabling to optimise the signal received depending on the environmental conditions (fog, rain, snow). The electronic board and the optics (mirror) can rotate inside the housing to allow installation even when the transmitter and the receiver are not installed on parallel walls. The alignment of the barriers is facilitated from one optical signalling with LED and a TP (Test Point) output of the received signal level. The alarm is signalled by a LED and a BUZZER signal (excludable) that can be used as walk-test.





TECHNICAL FEATURES	SPIDER PA	SPIDER DUAL	SPIDER PA WS	SPIDER ACTIVE
Maximum range	14 metres	14 metres	14 metres	Outdoor: 40 metres
Minimum range	3 metres	3 metres	3 metres	Indoor: 80 metres
Recommended installation height	from 1.00 to 1.20 m	from 1.00 to 1.20 m	from 1.00 to 1.20 m	..
Environmental conditions	-25°C ÷ +55°C	-25°C ÷ +55°C	-25°C ÷ +55°C	-20°C ÷ +60°C
Sizes (hwxwd)	217 x 76 x 74	217 x 76 x 74	217 x 76 x 74	217 x 76 x 74
Power supply nominal voltage	12V	12V	3.6V - 2.2A	12V
Power supply minimum voltage	10.5V	10.5V	Lithium Battery	11.5V
Power supply maximum voltage	15V	15V		15V
Absorption in quiet	18 mA	26 mA	25 µA	42 mA
Absorption in alarm	25 mA	31 mA	24 mA	50 mA
Infrared channels for individual detector	9 double	9 double	9 double	single-lobe double beams
Automatic gain control				yes
IR Selectable transmission power				yes
Test point				yes
Disqualified output				yes
Signal emitted by the microwave	-	impulse type	-	-
Frequency	-	10.525 GHz	-	-
Radiated RF power (EIRP)	-	14 dbm	-	-
Alarm output	I (C/NC or C/NO)	I (C/NC or C/NO)	-	I (C/NC or C/NO)
Tamper output	I (C/NC)	I (C/NC)	I (C/NC)	I (C/NC)
Transmission frequency	-	-	FM 868 MHz	-
Low battery signal	-	-	yes	-
Supervision signal	-	-	yes	-
Relay contacts range	12V 500 mA	12V 500 mA	-	12V 500 mA
Anti masking output	-	yes	-	-
AUX Input	for remote detector	-	-	-
Lock input	yes	yes	-	-
Thermal compensation	yes	yes	yes	-
Walk Test	optical : LED acoustic: buzzer	optical : LED acoustic: buzzer	optical : LED acoustic: buzzer	optical : LED acoustic: buzzer
Filters for masking zone	2	2	2	
Protection degree	IP 54	IP 54	IP54	IP54
IMQ Performances	2nd Level	2nd Level		



## ACCESSORIES

**TERM I:** Heating kit only for SPIDER ACTIVE (1 piece)

**KIT SP:** additional support for the pole mounting of all SPIDER models. The Kit is made of 2 brackets for the fixing of a housing. Enables fixing with the following accessory brackets:

**SB 120:** floor bracket    **SB 130:** buried bracket

**DSP:** optional spacer kit

DSP

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PRODUCTION OF  
RELIABLE TECHNOLOGY FOR SECURITY

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WARRANTY YEARS

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