

Curtain sensor  
for outdoors and indoors

**ONE** 





ONE is a new line of outdoor sensors for small, medium and large civil installations. AVS's decades of experience in the field of volumetric perimeter protection allowed us to develop a new line of extremely flexible digital sensors that adapt to every installation need.



ONE PA  
ONE PAHP

ONE DT  
ONE DTHP

ONE PAWS



# An extensive, non-bypassable veil of security

## **ONE PA - ONE PAHP**

A Fresnel-lens passive infrared sensor with curtain effect and range up to 12 metres.

The security sensor consists of an effective active infrared system that signals masking attempts or recognizes and distinctly signals the gradual decrease of detection due to the deposit of dust particles.

Two models:

(PA) A version with relay outputs for universal connection that is programmable with trimmer/DIP switches.

(HP) A version with a proprietary serial bus connection for wiring with AVS-compatible controllers and extremely precise programming using dedicated software (HPWin model).

## **ONE DT - ONE DTHP**

A dual technology passive infrared and 24-GHz microwave sensor with curtain effect managed in AND mode with a range of up to 12 metres.

Our passion for the development of internal and external microwaves led to the design of a small-sized planar antenna capable of analyzing environmental signals with extreme precision and, thanks to a latest-generation microprocessor, it only generates an alarm in the case of actual intrusion.

The combination with an infrared channel makes ONE particularly immune to false alarms.

Two models:

(DT) A full relay-output version with universal and programming with trimmer/DIP switches.

(DTHP) A version with serial connection over a proprietary BUS that is quickly wired to AVS-compatible controllers and features extremely precise programming with dedicated software (HPWin model).

## **ONE PAWS**

A passive infrared Fresnel lens via radio with curtain effect and range up to 8 metres.

ONE PAWS has an open-field radio range of up to 150 metres and independent operation of more than two years thanks to a high-capacity lithium battery and energy-saving function that reduces consumption.

The radio-version ONE ensures flexible, secure and fast installation.



# With ONE, the security you dreamed of becomes reality.

## Signal analysis

AVS Electronics has developed a particularly effective lens that optimizes detection even with background noise.

Particular attention has been paid to the analysis of problems caused by animals.

ONE's integrated digital technology analyzes all information from the PIR and microwave (if present) with high precision and processes it in real-time thanks to a latest-generation microprocessor. The duration, amplitude and distance of the signals are continuously analyzed before the actual alarm is generated.



Different DIP switch configurations for the infrared section and micrometric adjustments of the microwave make calibrating the sensor simple and precise.

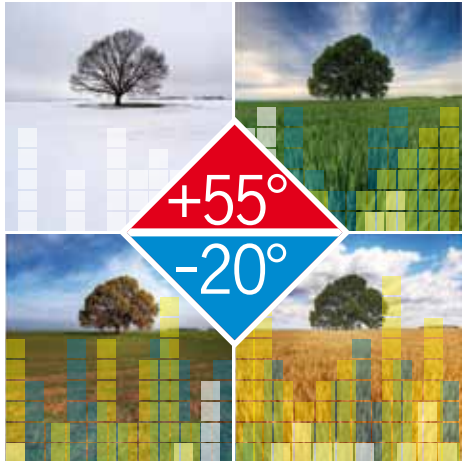
## Environmental control

The new **accelerometer** technology that AVS Electronics has added to the ONE sensor detects temperature variations with extreme precision.

The microprocessor handles this important information dynamically and makes the necessary corrections by varying the amplification section of the infrared to maintain a constant response.

Seasonal heat changes are a critical factor for infrared sensors and the digital technology correlated to this particular analysis performed by the microproces-

sor maintains the yield of the sensor and, therefore, its reliability constant.





### **360° security**

Despite its small size, ONE pays particular attention to protecting the detection zone.

To ensure the effective operation, two technologies were developed for recognizing masking attempts.

ONE inserted on all models, and a second integrated only into sensors with microwave.

### **PIR anti-masking**

The active infrared anti-masking circuit, present on all models, consists of a receiver (RX) and a transmitter (TX) positioned corresponding to the lens. It detects an obstacle in front of the sensor at a maximum distance of about 10 cm.

### **MW anti-masking**

The anti-masking circuit on microwave models ONE DT and ONE DTHP, detects the approach of a metal obstacle closer than 1 metre from the sensor. The anti-masking signal can also be associated to a relay, in the universal version, or managed directly by an AVS-compatible controller in serial, on the HP versions.

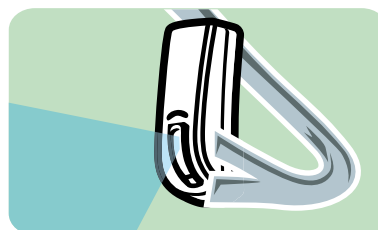
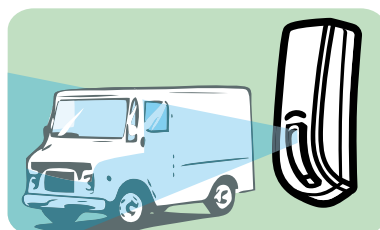
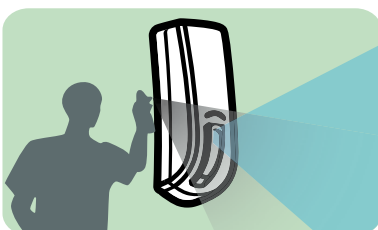
### **Accelerometer**

A new digital technology that recognizes disorientation of the sensor, ripping off the wall and tampering without the use of additional protective electromechanical protection devices.

Tampering is signalled by the activation of a dedicated output in the universal model and directly-managed in serial by AVS-compatible controllers.

### **Mechanical structure**

The double-bottom solution and special techniques used in the design of the couplings between various modules protect the sensor from rain and infiltrations could impair its effectiveness. Protection is provided by a special gasket fused directly on to the mechanical structure to ensure excellent insulation and durability.

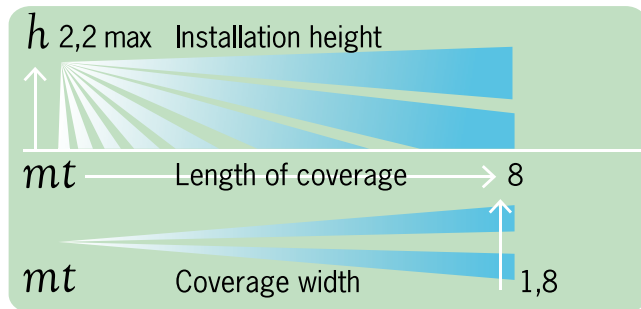


## Operating modes

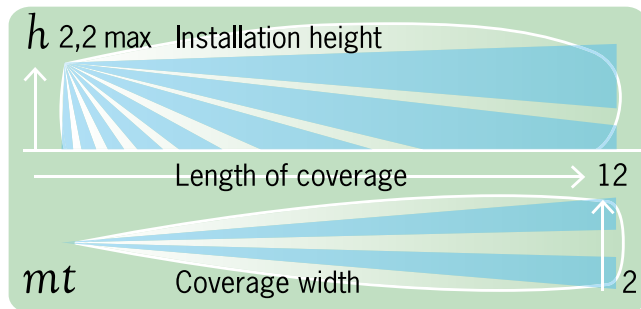
### Infrared-only versions:

#### ONE PA – ONE PAHP – ONE PAWS.

ONE uses a single technology, analyzing the infrared parameters.



Coverage  
ONE PA  
ONE PAHP  
ONE PAWS



Coverage  
ONE DT  
ONE DTHP

### Infrared and microwave versions:

#### ONE DT – ONE DTHP.

ONE always works in AND mode; the passive infrared and microwave sections must both detect, according to

pre-established rules to generate an alarm. Two trimmers dedicated to the individual are used to best calibrate the ranges of the infrared and microwave.

## Installation

Using the special brackets included in the package, the sensor adapts to any situation, ensuring the best possible protection.

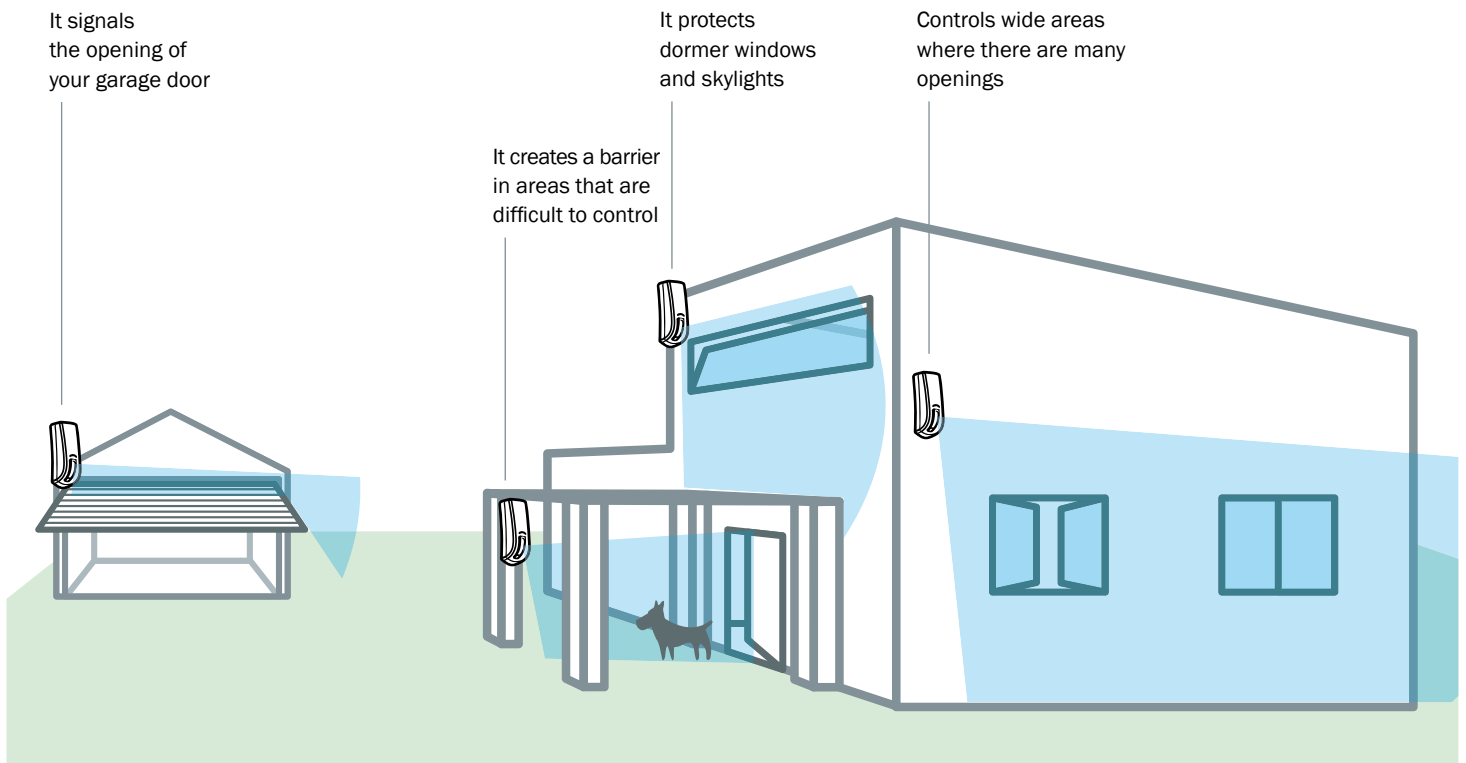


Supports available for:

- Fastening directly to a wall
- Fastening to a wall with right or left angle of  $5^\circ$
- Fastening to a wall with a bivalent (right and left) bracket for installations at  $90$  or  $85^\circ$
- Fastening to a wall with bracket for installation at  $45^\circ$  (optional model SB)

When mounted with its supports, ONE extends a veil of security a few centimetres from the perimeter of the building or internal areas to be defended, thus preventing any attempt to circumvent the protection.





## Connections

The ONE line is divided into a series of products ranging from infrared versions to dual-technology, wired and radio versions.

As regards connection options, there are two solutions:

- **A universal connection**, with two relay outputs with floating changeover for the alarm and tamper.
- **A serial connection (RS485)** compatible with several AVS controllers. In this case, a quick and easy 4-wire connection is used to connect the sensor to the system and check and program all options of the ONE HP through dedicated software.

## Management software

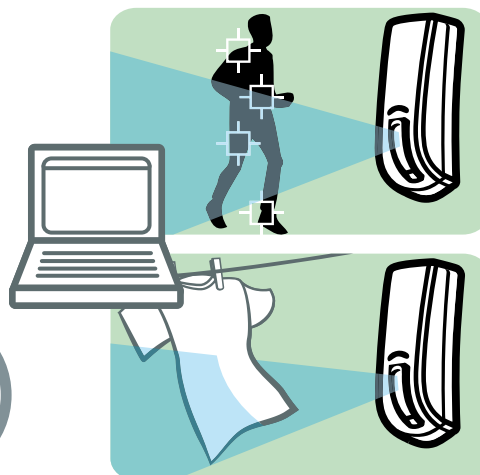
Using the PC application software (HPWin model), it is possible to better program the characteristics of ONE HP sensors. By connecting the PC to the controller locally via USB or remotely via PSTN or GSM, it is possible to access each individual sensor and check the detection quality of both the infrared and microwave sections.

Thanks to the simulation of a real virtual oscilloscope, it is able to display any signals that reveal environmental disturbances.

## Eco-compatibility

AVS Electronics is continuing its commitment to eco-friendly security.

The use of materials with a low environmental impact, the smallest possible number of polluting minerals and the greatest possible use of recycled materials, research for a low-energy-consumption product, reduction of the steps of the supply chain between manufacturer and consumer are our commitment to a cleaner world.





# AVS electronics

ALARM AND FIRE INTEGRATED SYSTEMS



AVS ELECTRONICS S.p.A.  
 Via Valsugana, 63  
 35010 Curtarolo (Padova) Italy  
 Tel. +39 049 9698 411  
 Fax +39 049 9698 407  
 www.avselectronics.com  
 avs@avselectronics.it

DEVELOPMENT AND  
 PRODUCTION OF  
 RELIABLE TECHNOLOGY  
 FOR SECURITY

## TECHNICAL FEATURES

	ONE WS	ONE PA	ONE PA HP	ONE DT	ONE DT HP
Nominal voltage	3,6 V =	12 V =	12 V =	12 V =	12 V =
Power supply voltage	Max: 3,6 V = Min: 3 V =	Max: 15 V = Min: 10,5 V =	Max: 15 V = Min: 10,5 V =	Max: 15 V = Min: 10,5 V =	Max: 15 V = Min: 10,5 V =
Absorption	25 µA in quiet 20 mA in alarm	25 mA in quiet 28 mA in alarm	30 mA in quiet 33 mA in alarm	31 mA in quiet 33 mA in alarm	29 mA in quiet 33 mA in alarm
Coverage	10° on 8 effective metres			10° on 12 effective metres	
Operating logic	IR	IR	IR	AND	AND
Infrared anti-masking	YES	YES	YES	YES	YES
Microwave anti-masking	NO	NO	NO	YES	YES
Temperature compensation	YES	YES	YES	YES	YES
Signal emitted by the microwave	-	-	-	Pulsed	Pulsed
Microwave frequency	-	-	-	24 GHz	24 GHz
Transmission frequency	FM 868 MHz	-	-	-	-
RS485 serial connection	NO	NO	Yes, with Xtream controllers and XSATHP satellites	NO	Yes, with Xtream controllers and XSATHP satellites
Range in open field	~ 150 m.	-	-	-	-
Low-battery signal	YES	-	-	-	-
Survival signal	YES	-	-	-	-
Installation height	recommended from 1,9 to 2,2 m				
Display through XWIN software	NO	NO	YES	NO	YES
Management through XWIN software	NO	NO	YES	NO	YES
Accelerometer	YES				
Electronic card operating conditions	-25° C / + 55° C				
Weight	100 g	100 g	100 g	100 g	100 g
Dimensions (P x L x H)	44 mm x 40 mm x 123				
Protection grade	IP54				