



# Meteorology



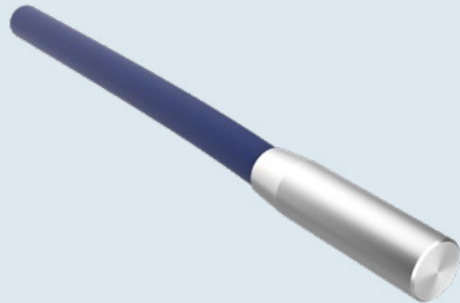
# Indice

## Meteorology

WE710	Temperature sensor
WE720	Humidity sensor
WE730	Barometer
WE740	Rain gauge
WE750	Wind speed sensor
WE753	Wind speed and direction sensor
WE755	Wind direction sensor
WE760	Solar radiation sensor
WE770	Snow meter
WE780	Evaporimeter

# WE710

## Temperature sensor



### Description

This element is one of the most used in different field of application, it engage a leading role in the meteorological field, which can be correlated to other meteorological components, and it's used has a compensation data for structural monitoring.

The WE710 temperature sensor is an instrument suited for measuring temperature in different applications:

air, liquid, walls, stones, embedded in concrete, inserted into the ground etc.

The WE710 temperature sensor consists in a stainless steel housing that allow his use in all environments.

SIM has developed an adequate protection for all above situations, which, has the capability to assure long longevity to the sensor, without changing the sensible element features

For external applications SIM also provide, upon request, a solar shield, required for accurately measure temperature, the sensor should be shielded from direct sunlight or precipitation and it should be adequately ventilated.

Every sensor is provided with a calibration certificate that attests the results of the test performed and all electromechanical features.

Manual read out with DATAVIEW.

Automatic read out with MINILOG, MYLOG.

Readout units with NATUN.

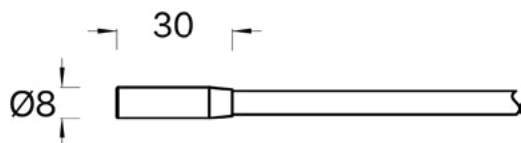
### Applications

Temperature measurement for internal and external mounting.



# WE710

## Temperature sensor



### Technical features

Model	<b>WE710-PT</b>	<b>WE710-42</b>	<b>WE710-AN</b>	<b>WE710-CN</b>
Supply	1 mA	10-30 Vcc	5-30 Vcc	5-30 Vcc
Output	100 $\Omega$ a 0 °C	4-20mA	$\mu$ A/K K= °C+273.1	$\mu$ A/K K= °C+273.1
Range	-100 ÷ 104°C	Adjustable*	-25 ÷ 105°C	-50 ÷ 105°C
Accuracy	1/3 DIN	0.25 °C	0.3 °C	0.1 °C
Consumption	1 mA	30 mA	0.3 mA	0.3 mA
Material	Stainless steel			
Dimensions**	$\varnothing 8 \times 30$ mm			
Protection	IP65			

### Accessories

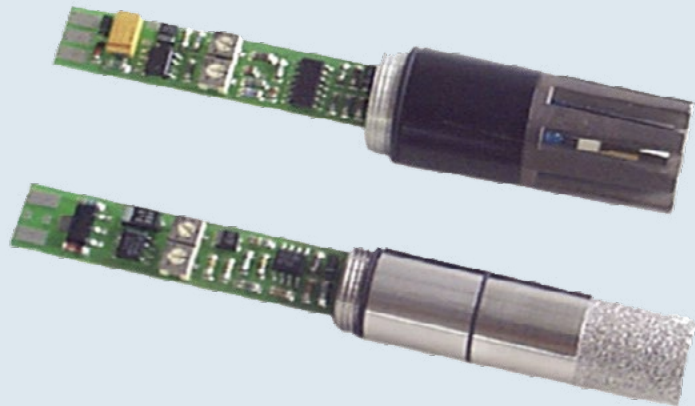
#### **Solar shield**

#### **WE710-AX-SSH1**

- \* The range cannot be changed in the field, please specify range when you order.
- \*\* In WE710-42 model the 4-20mA transmitter is housed in a rugged enclosure in polyester glass fibers reinforced, IP65 dimension 55X55X38mm.

# WE720

## Humidity sensor



### Description

The WE720 is a sensor suited for measuring relative humidity in inners, outers and masonries applications.

The sensor produces an electrical output signal (0-1Vcc, 4-20mA), directly proportional to the percentage of the humidity measured. Since the humidity is influenced from the temperature fluctuations, the measurement is automatically compensated by an internal thermistor (PT100).

For masonries applications, the sensor should be inserted in a hole and the measurement should be taken after 48 hours, in order to allow a stabilized readout.

For external applications SIM also provide, upon request, a solar shield. Every sensor is provided with a calibration certificate that attests the results of the test performed and all electromechanical features.

Manual read out with DATAVIEW.

Automatic read out with MINILOG, MYLOG.

Readout units with NATUN.

### Applications

Humidity measurement for inners and outers.



# WE720

## Humidity sensor



For outers with solar shield



For inners

### Technical features

Model	<b>WE720-IN</b>	<b>WE720-ES</b>
Use	for inners	for outers
Supply/output	6÷30Vdc /0 ÷ 1Vcc 12÷30Vdc /4 ÷ 20mA	4-20mA
Range	0 ÷ 100 %RH	
Operating temperature	-20 ÷ +80 °C	
Linearity	±2%RH (5 ÷ 95 %RH a 10 ÷ 40 °C)	
Additional error	<0,1% (<10°C >40°C)	
Casing material	PVC	
Filter material	PVC	Stainless steel
Dimensions	Ø16 x 150 mm	

### Accessories

**Solar shield**

**WE710-AX-SSH1**

# WE730 Barometer



## Description

The WE730 barometric pressure transmitter is a sensor suited for measuring the atmospheric pressure.

The barometer is one of the most common instruments used in the meteorological field, since an atmospheric pressure variation suggests a climate shift. Every sensor is provided with a calibration certificate that attests the results of the test performed and all electromechanical features.

Manual read out with DATAVIEW.

Automatic read out with MINILOG, MYLOG.

Readout units with NATUN.

## Applications

Atmospheric pressure measurement.



# WE730

## Barometer

### Technical features

Supply	7-24 Vcc
Output	4-20 mA
Range	800 ÷ 1200 mbar
Linearity	0.25% FS
Operating temperature	-20 ÷ +70 °C
Protection	IP65
Dimensions	Ø 25 x 145mm
Material	Stainless steel
Weight	0.325 Kg

### Accessories

<b>Mounting hangers</b>	<b>WE730-AX-MW01</b>
<b>Mounting hangers for puncheon</b>	<b>WE730-AX-MW02</b>



# WE740 Rain gauge



## Description

The WE740 tipping bucket measure the rain rate: a data that correlated to the groundwater level, represents an important factor in the idrogeological field study.

The WE740 rain gauge is produced in two models: the first is in plastic material and the second in aluminum, which assure a long functionality in every atmospheric condition. The measuring system consists of a standard measurement weight magnet that takes measurements in 0.25mm for every tip of the bucket, producing an electrical pulse that can be read by any data acquisition system produced by SIM:

- MINILOG data acquisition system
- NATUN data acquisition system

SIM also provide, upon request, a 4-20 mA converter that allows the tipping bucket connection to any PLC or data logger or with the data acquisition systems NATUN or MINILOG.

## Applications

Rain measurement.



# WE740

## Rain gauge

### Technical features

	<b>WE740-AL</b>	<b>WE740-PL</b>
Model	<b>WE740-AL</b>	<b>WE740-PL</b>
Resolution		0.2 mm
Accuracy	1% x 25mm/h	3% x 100mm/h
Range		0 ÷ +51 °C
Average switch closure time		135 ms
Operating temperature		0 ÷ 51 °C
Material	Aluminum	ABS
Dimensions	Ø200 x 283mm	Ø 210 x 380mm
Rain area	0.0314 m <sup>2</sup>	0.0214 m <sup>2</sup>
Weight	3.0 Kg	0.900 Kg

### Accessories

<b>4-20 mA converter</b>	<b>WE740-IM-420</b>
Range	20mA per 32impulses/min
Supply	10-30Vcc
Temperature	0÷51 °C
Dimensions	83 x 38 x 50
Weight	0.225 Kg
<b>Heating resistor</b>	<b>WE740-AX-TRRS</b>
<b>Mounting hangers</b>	<b>WE740-AX-STMU</b>
<b>Mounting hangers for puncheon</b>	<b>WE755-AX-MW01</b>
<b>Puncheon</b>	<b>WE-PA-IN-MM*</b>
Material	Stainless steel
Dimensions	1"
<b>Puncheon</b>	<b>WE-PA-AZ-MM*</b>
Material	Galvanized steel
Dimensions	1"

\* The puncheon in Stainless steel or galvanized steel is available in 3mt temples; specify the desired length on the order.

# WE750

## Wind speed sensor



### Description

The WE750 wind speed sensor is one of the most used sensors for meteorological measurements.

The detection of wind speed is widely used in many sectors such as agriculture, meteorology, industry as well as in the protection of the environment and in new technologies concerning renewable energy sources. In consideration of the environmental characteristics in which these instruments are used, particular care has been taken in their implementation. The wind speed sensor mod. WE750, made of plastic material, consists of three spoons connected to a body which rotates at a variable speed according to the intensity of the wind, creating an electrical signal directly proportional to the speed.

Every sensor is provided with a calibration certificate that attests the results of the test performed and all electromechanical features.

Manual read out with DATAVIEW.

Automatic read out with MINILOG, MYLOG.

Readout units with NATUN.

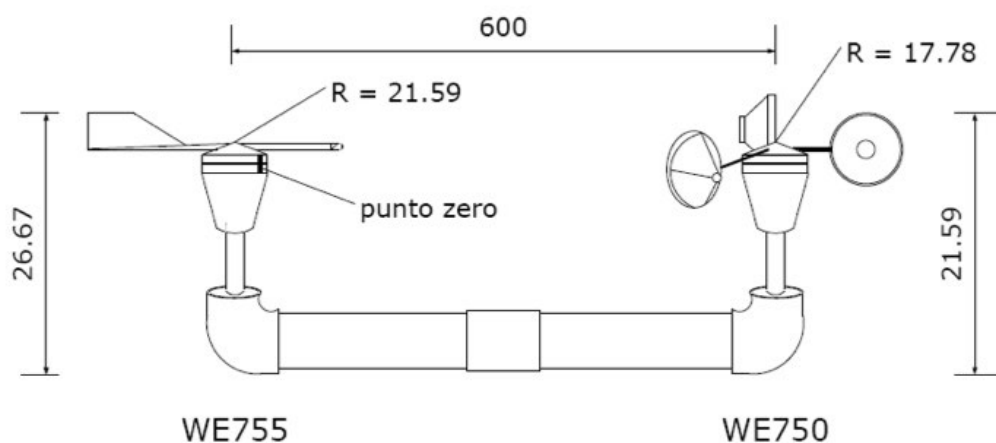
### Applications

Agriculture, meteorology, environment protection, etc.



# WE750

## Wind speed sensor



### Technical features

Supply	10-36 Vcc
Output	4-20 mA
Range	0÷50 m/s
Minimum threshold	1.35 m/s
Accuracy	0.09 m/s
Consumption	as output
Warm up	3 sec
Operating temperature	-40 ÷ +55 °C
Dimensions	Ø178 x 216 mm
Material	PVC
Weight	0.450 Kg

### Accessories

<b>Mounting hangers for puncheon</b>	<b>WE750-AX-MW01</b>
<b>Puncheon</b>	<b>WE-PA-IN-MM*</b>
Material	Stainless steel
Dimensions	1"
<b>Puncheon</b>	<b>WE-PA-AZ-MM*</b>
Material	Galvanized steel
Dimensions	1"

\* The puncheon in Stainless steel or galvanized steel is available in 3mt temples; specify the desired length on the order.

## WE753

# Wind speed and direction sensor



## Description

The WE753 wind speed and direction sensor is one of the most used sensors for weather measurements.

The detection of speed and wind direction, finds great use in many sectors such as agriculture, meteorology, industry as well as in safeguarding environment and in new technologies concerning renewable energy sources.

Considering of the environmental characteristics in which these instruments are used, it has been taken particular care in the production of this sensor.

The WE753 sensor is made of plastic material and based on the ultrasound principle. It is suitable for all climatic zones and also for solar-powered stations; furthermore it does not need any special maintenance or re-calibrations.

An integrated heater guarantees operation even at extremely low temperatures down to  $-40^{\circ}\text{C}$ .

Every sensor is provided with a calibration certificate that attests the results of the test performed and all electromechanical features.

Manual read out with DATAVIEW.

Automatic read out with MINILOG, MYLOG.

Readout units with NATUN.

## Applications

Agriculture, meteorology, industry, safeguarding environment, etc.



# WE753

## Wind speed and direction sensor

### Technical features

Supply	24V $\pm$ 10% Vcc with heater 12V without heater
Output	2 uscite 4-20 mA
Range	Sp. 0÷90 m/s ; Dir. 0÷359.9°
Soglia minima	1.35 m/s
Accuracy	0.2 m/s ; 3° RMSE da 1,0 m/s
Consumption	Same as signal output With heater 1A
Warm up	10 sec
Operating temperature	-40 ÷ +60 °C with heater
Dimension	Ø 150 x 170 mm
Material	PVC
Weight	0.800 Kg

### Accessories

<b>Bracket for supporting pole</b>	<b>WE753-AX-MW01</b>
<b>Supporting pole</b>	<b>WE-PA-IN-MM*</b>
Material	Aluminum
Dimension	Ø 50mm
<b>Supporting pole</b>	<b>WE-PA-AZ-MM*</b>
Material	Galvanized steel
Dimension	1,5"

\* The supporting pole, both in stainless steel and in galvanized steel, is available in 3mt rods; specify the desired length at the time of the order

# WE755

## Wind direction sensor



### Description

The WE755 wind direction sensor is one of the most used devices for weather measurements.

The detection of wind direction, finds great use in many sectors such as agriculture, meteorology, industry as well as in the protection of the environment and in new technologies concerning renewable energy sources. Considering of the environmental characteristics in which these instruments are used, it has been taken particular care in the production of this sensor. The WE755 wind direction sensor is made of PVC and stainless steel consists of a fin which, following the wind direction, produces a 4-20mA signal which corresponds to an angle from 0 to 360 °.

Every sensor is provided with a calibration certificate that attests the results of the test performed and all electromechanical features.

Manual read out with DATAVIEW.

Automatic read out with MINILOG, MYLOG.

Readout units with NATUN.

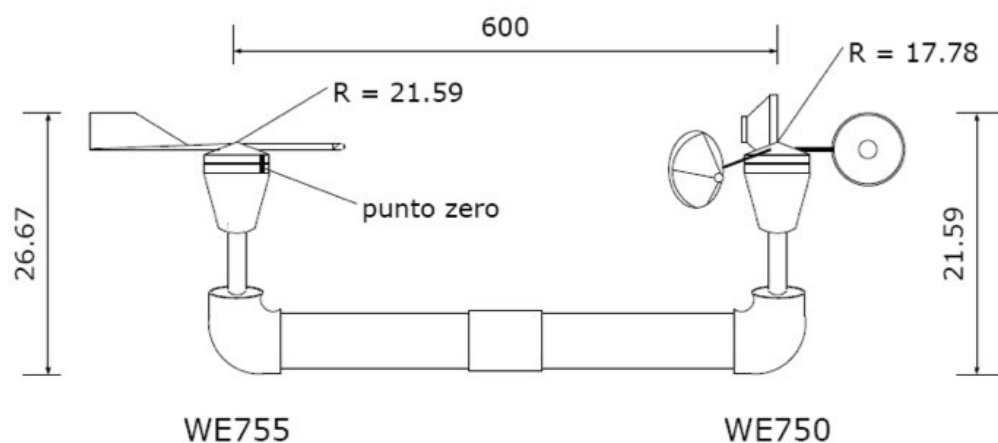
### Applications

Agriculture, meteorology, industry, safeguarding environment, etc.



# WE755

## Wind direction sensor



### Technical features

Supply	8-30 Vcc
Output	4-20 mA
Range	0÷360°
Accuracy	0.5% FS
Resolution	12 bit
Updating data	1 ms
Consumption	Same as signal output
Operating temperature	-40 ÷ +55 °C
Dimension	Ø216 x 267 mm
Material	Casing in PVC, wing in stainless steel
Weight	0.550 Kg

### Accessories

<b>Bracket for supporting pole</b>	<b>WE755-AX-MW01</b>
<b>Supporting pole</b>	<b>WE-PA-IN-MM*</b>
Material	Stainless Steel
Dimension	1"
<b>Supporting pole</b>	<b>WE-PA-AZ-MM*</b>
Material	Galvanized steel
Dimension	1"

\* The supporting pole, both in stainless steel and in galvanized steel, is available in 3mt rods; specify the desired length at the time of the order



# WE760

## Solar radiation sensor



### Description

The solar radiation sensor or pyranometer WE760 consist of a pyrheliometer, an instruments suited for measuring the direct solar rays intensity (the rays that reach earth without reflection)

The solar radiation sensor is produced with a mounting plate, (with a bubble level and leveling screws) for an easy sensor leveling adjustment.

Every sensor is provided with a calibration certificate that attests the results of the test performed and all electromechanical features.

Manual read out with DATAVIEW.

Automatic read out with MINILOG, MYLOG.

Readout units with NATUN.

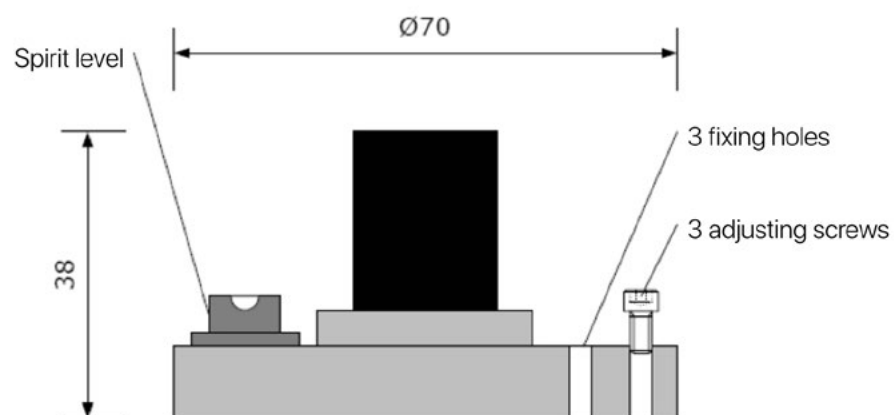
### Applications

Meteorology, environment etc.



# WE760

## Solar radiation sensor

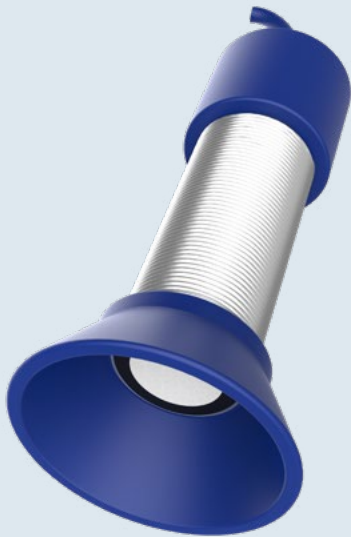


### Technical features

Supply	10-36 Vcc
Output	4-20 mA
Range	0-1500 W/m <sup>2</sup>
Accuracy	1% FS
Consumption	as output
Warm up	3 sec
Operating temperature	-40 ÷ + 55 °C
Dimensions	$\varnothing 76 \times 38$ mm
Weight	0.150 Kg

# WE770

## Snow meter



### Description

The snow meter WE770 is an instrument suited for measuring the snow height, it consist of an ultrasonic sensor.

The working principle of the sensor consists by timing how long a sound wave takes to return after reflecting into an object.

The instrument translate the elapsed time of the sound wave into distance, producing a 4-20 mA output signal directly proportional to the distance between the sensor and the snow.

Every sensor is provided with a calibration certificate that attests the results of the test performed and all electromechanical features.

Manual read out with DATAVIEW.

Automatic read out with MINILOG, MYLOG.

Readout units with NATUN.

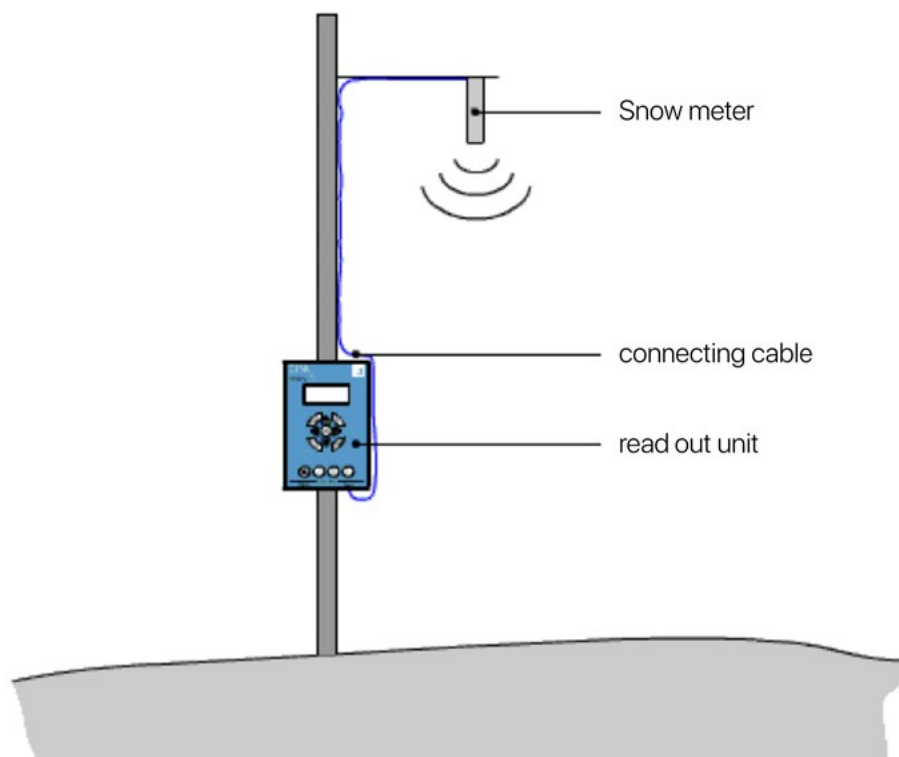
### Applications

Snow depth measurement.



# WE770

## Snow meter



### Technical features

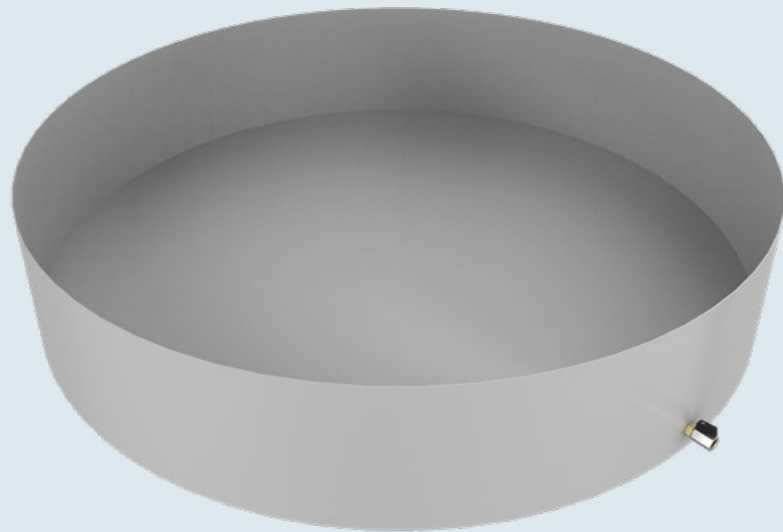
Model	<b>WE770-FS*</b>
Supply	14-30 Vcc
Consumption	70mA max
Warm up	15 sec.
Output	4-20 mA
Max. range	0.1 – 4.3 mt
Min. range	0.1 – 0.6 mt
Accuracy	Better of 0.5% FS
Repeatability	0.1% reading
Angle	12°
Reading update	50ms
Operating temperature	-40 ÷ + 70 °C
Protection	IP68
Dimensions	M30 x 1.5 x 103 mm
Material	ABS
Weight	0.360Kg - with mounting bracket 1Kg

### Accessories

<b>Puncheon (1" x 3mt)</b>	<b>WE770-AX-MW01</b>
<b>Mounting bracket</b>	<b>WE770-AX-MWL1</b>

\*FS Indicate the range

# WE780 Evaporimeter



## Description

The WE780 Evaporation Pan is a stainless steel pan for measuring daily evaporation. The Evaporation Pan is built to be compatible with all standard National Weather Service pan evaporation measurements. The WE780 is a Class A Evaporation Pan that features a drain plug and an attached stilling well for easy installation of a water level sensor.

The WE780 Evaporation Pan is normally installed on a wooden platform set on level ground. The stainless steel pan is used to hold the water. Since the amount of evaporation is a function of temperature, humidity, wind, and other conditions, in order to relate the evaporation to current or expected conditions, the maximum and minimum temperature of the water and the amount of air passage are normally recorded along with the evaporation. SIM STRUMENTI offers water level sensors, water temperature sensors and weather sensors to complete an evaporation monitoring system.

Every sensor is provided with a calibration certificate that attests the results of the test performed and all electromechanical features.

Manual read out with DATAVIEW.

Automatic read out with MINILOG, MYLOG.

Readout units with NATUN.

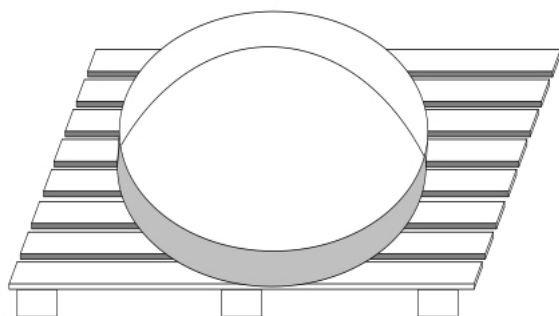
## Applications

Agriculture, meteorology, environmental protection.



# WE780

## Evaporimeter



### Technical features

<b>Tank</b>	<b>WE780-VS</b>	
Material	Stainless Steel	
Dimension	Ø 121 x 24 mm	
Weight	22 Kg	
<b>Level sensor</b>	<b>WE780-SE</b>	
Type	Piezoelectric	
Range	500 mm	
Overpressure	150%	
Supply	8-24 V	
Output	4-20 mA	
Linearity	0.25% FS	
Max. thermal error	< 0.04% / °C	
Long term precision	< 0.2% FS (1 year)	
Operating Temperature.	-25 ÷ 80 °C	
Protection	IP68	
Material	Stainless Steel	
Dimension (mm)	Ø 25 x 120 mm	
<b>Temperature sensor</b>	<b>WE780-TE-CN</b>	<b>WE780-TE-PT</b>
Supply	5-30 Vcc	1 mA
Output	µA/K K=°C+273.1	100 Ω a 0 °C
Range	-50 ÷ 105°C	-100 ÷ 104°C
Accuracy	0.1 °C	1/3 DIN
Consumption	0.3 mA	1 mA
Material	Stainless Steel	
Dimension	Ø15x40mm	
Protection	IP68	

### Accessories

<b>Wooden platform</b>	<b>WE780-BS</b>
<b>Automatic pan refilling</b>	<b>WE780-PR</b>
<b>4-20mA converter for the WE780-TE-CN temperature sensor</b>	<b>WE710-PT-420</b>



**SIM STRUMENTI SNC**

Via Merendi 42  
20010 CORNAREDO (MI)  
ITALY  
Tel: +39 02 9700 30 39  
Fax: +39 02 9729 01 67  
[www.simstrumenti.com](http://www.simstrumenti.com)  
[sim@simstrumenti.com](mailto:sim@simstrumenti.com)