

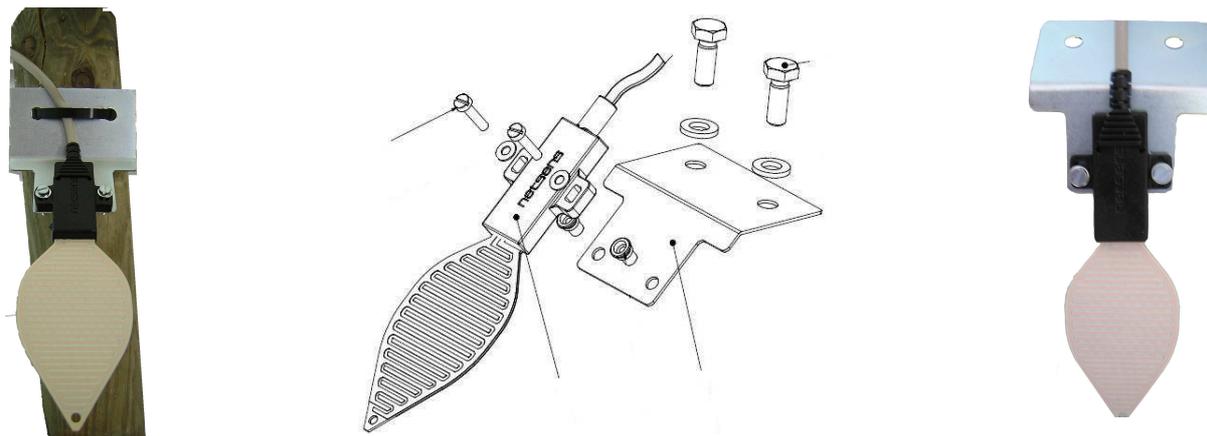
## E-LEAF: Technical Manual and Tutorials

### Installation Guide

The installation of E-Leaf sensor is very simple, as it is provided already mounted on an aluminium bracket, which tilts to 45 degrees.

The aluminium bracket has two holes that allow the attachment of the sensor to poles, walls, etc., with plastic straps or metallic screws.

The bracket can be oriented in two different ways, simply by removing side screws on the sensor, to allow proper mounting at 45° from the vertical, horizontal.



**NOTE:** In many applications, the leaf wetness determines the conditions for the development of certain plant diseases, so it is necessary to place the sensor in more critical positions, namely those in which more easily can form condensation; in open fields it should be oriented toward the North, in greenhouses or indoors is preferable to place it away from heat. The placement of 45° from the vertical is of paramount importance for effective simulation of the behaviour of leaf wetness, and the special paint and milled surface with parallel lines to avoid an immediate sliding drops, simulating the detention by the wall leaf.

### Technical Specifications

Analogue output, available in two versions:

Power supply up to 5 VDC ratiometric output

Power supply to 18 VDC with output voltage 0.5 - 3 VDC

Operating Range: - 30 + 60 ° C

Accuracy: + / - 5%

Protection: IP67

Standard cable: 180 cm

#### Cables Colours

Signal	Color
Vcc	Brown
Ground	White
Output 1 -Leaf wetness Top side	Yellow
Output 2 - Leaf wetness Bottom side	Green

Relationship between the degree of leaf wetness - voltage output value - Value Rate  
- Supply voltage equal to 3.0V

Wetness Degree	Image Example	Output Voltage [V]	Value in Percentage
<b>Zero Wetness</b>		<b>0.5</b>	<b>0 %</b>
<b>Micro gocce sparse e rade (diametro goccia inferiore a 2 mm)</b>		<b>0.7</b>	<b>10 %</b>
<b>Micro scattered drops (less than 2mm diameter drop)</b>		<b>1.2</b>	<b>20 %</b>
<b>Mini drops scattered and sparse (about 3 mm diameter drop)</b>		<b>1.4</b>	<b>30%</b>

<p><b>Scattered drops (4-5 mm in diameter)</b></p>		<p><b>1.9</b></p>	<p><b>50 %</b></p>
<p><b>Drops</b></p>		<p><b>2.5</b></p>	<p><b>70 % - 80%</b></p>
<p><b>Complete Wetness</b></p>		<p><b>3</b></p>	<p><b>&gt;90%</b></p>

**Sensor Test**

The test operation can be done in two ways:

- 1) if the sensor is connected to a reading device, eg. MeteoSense or VineSense, wetting both sides of the sensor with a drop of water and wait for the display of measurements on the web Netsens.
- 2) In case of purchase of the single sensor, you can read the data through a simple voltmeter, after powering the sensor with a voltage in the range expected from datasheet.

Sensor is completely dry, the meter should display a voltage of 0.5 V stable, but with the wet sensor voltage should be higher, up to a maximum supply voltage in the case of leaf completely wet.

## **Netsens Support**

Before contacting Netsens technical support is advisable to control the correct wiring of the sensor and cable connection. Cable connections account for a large portion of the potential problems.

For any questions or concerns about the connection or the proper functioning of the sensor, please contact the Netsens service or the nearest Netsens dealer to you.

**IMPORTANT:** Before sending a sensor to the service centre, contact Netsens Ltd. or a dealer in advance to agree the intervention.

### Contacts:

Technical Office phone number: +39 055 3437042

Technical Office fax number: +39 055 3416085

email: [support@netsens.it](mailto:support@netsens.it)

website: [www.netsens.it](http://www.netsens.it) you can also download all the product documentation on Netsens site

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**...Netsens, sensing the environment.**