

# E-Leaf Leaf Wetness Sensor PS-0061-AD

## Leaf Wetness Sensor

- Leaf wetness electronic measurement
- Two distinct measuring faces (top and bottom)
- Thermodynamically similar to plant leaves
- High resistance to mechanic stresses and chemical treatments
- Epoxy coating for long term stability
- Designed for 365 days in field operation

### APPLICATIONS:

- DSS for agriculture pest management
- Greenhouses humidity control



### Description

The sensor, manufactured by Netsens since 2009, features the leaf wetness detection on the upper and lower side of the leaf, allowing to assess the specific fungal diseases observed.

The special manufacturing technique protects the sensor with a epoxy layer, to preserve the sensor itself and the electronic components from chemicals (such as the copper used for most of the spraying actions in agriculture), thereby ensuring a longer life and better sensitivity of measurement.

The material the sensor is made of has been selected for its characteristics, thermodynamically similar to leaves of plants, so as to reproduce more realistic conditions leading to air condensation.

The sensor is available with analogue output and can be integrated with the wireless units and stations VineSense™, AgriSense™, MeteoSense™ as well as with any datalogger device with voltage analogue input.

### Sizes:

130 x 41 x 7 mm (excluding cable)  
Sensor surface thickness 1 mm

### Electric Specifications:

Analogue output 0 – 3 V  
Input Power 3.3 – 5.0 VDC

Signal	Colour
Vcc	Brown
Ground	White
Output 1 (Top)	Yellow
Output 2 (Bottom)	Green

### Technical Features:

Operative Range: - 30 + 60 °C  
Accuracy: +/- 5 %  
Protection: IP67  
Standard Cable: 180 cm, other length on request

### Other Features:

The sensor is coated with a special protective white layer, ensuring immunity to attack by chemicals and weathering. The electronics for the measurement of the sensor is protected by a special polypropylene housing.

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## Installation:

The leaf wetness sensor and-E-Leaf is designed to be installed in the field amid the vegetation, in order to reproduce the wetting conditions of leaves (Figure 1).

Thanks to the steel bracket E-Leaf can be easily installed anywhere.

The bracket forms an angle of 45° from the vertical so as to prevent stagnation of rain water or dew.

For proper operation, during installation you must take care to meet the following requirements:

- Make sure the upper side of the sensor is facing upward.
- Place the sensor towards the north.
- Place E-Leaf at 45° from the vertical.
- Make sure that the sensitive surfaces of the sensor (white part) are free from any contact (eg, leaves, vegetation, etc.).

The sensor can be installed using multiple anchor points (Figure 2):

- You can use the screws (A) or plastic ties to secure the plastic body (B) directly to the structure in this field.
- Alternatively you can use the bracket to 45 °(C) with holes and / or bolts (D) supplied to install the weather station MeteoSense / VineSense.

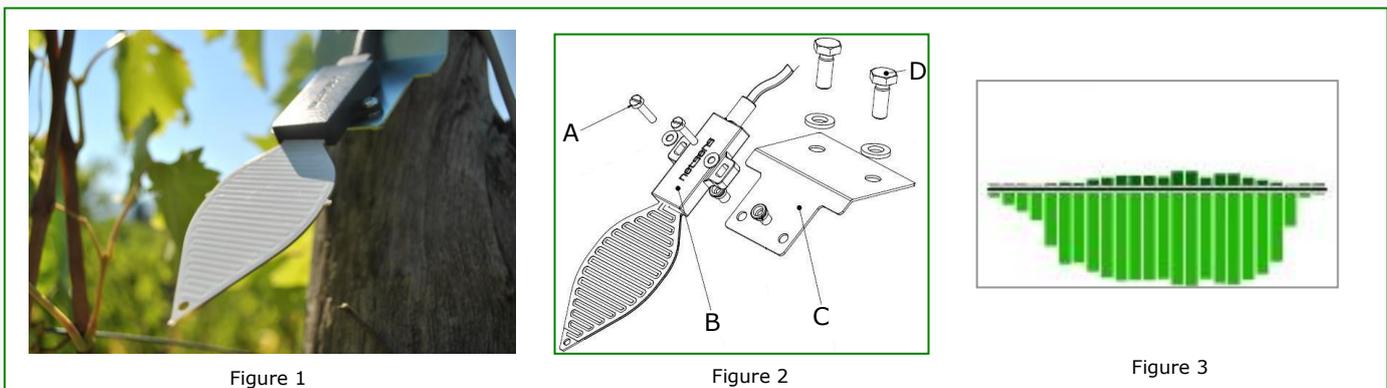
The output provided by the sensor represent the wetness intensity on each surface (upper, lower, see. Figure 3).

**WARNING:** Pay attention in correctly connecting the power cables, reverse polarity could affect the integrity of the sensor and cause irreversible damage.

In case of mechanized operations, remove the sensor or place signs to allow operators to avoid damaging the sensor.

Do not bend or twist; do not use any cleaning product on the surface, nor apply tapes or any other component on the surface.

Contact Netsens for applying specific products to preserve long term output response in case of prolonged UV exposure.



## Traceability, packaging and shipping:

Each sensor WS-0049-IB is individually tested and a unique serial number identification is assigned, which allows tracking over time; this code can be printed on the shipping carton, on the sensor itself or alternatively on the appropriate section of the user manual. Please keep this code carefully, to be communicated to the technician in case of failure or replacement.

The sensors are sold individually equipped with its own package, which will protect the sensor during transport.

If the box is open or visibly damaged, don't accept delivery by courier. Do not open the box with knives, cutter blades, which could damage the sensor or its cable.

## Ordering Codes:

PS-0061-AD	E-LEAF Leaf Wetness Sensor, 180 cm cable
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# E-Leaf Leaf Wetness Sensor PS-0061-AD

## Warranty:

Netsens s.r.l. warrants that the above described components will be free from defects in material and workmanship for the following time period from the purchasing:

- Two years for items purchased by final users for non professional use;
- One year for items purchased by companies and organizations for professional use.

This warranty is valid only if all the components are used accordingly to the Manufacturer's indication and to the recommendations included in this User Manual.

This warranty does not cover: batteries, fuses, lights and any other consumable equipment. Also this warranty does not apply for damages due to neglect, misuse, contamination, alteration, accident or abnormal conditions of operation or handling, including failures caused by use outside Manufacturer specifications.

This warranty covers the original purchaser and it is not transferable.

If one or more components are supposed to be defective, contact Netsens s.r.l. or your local reseller in order to obtain a valid return authorization.

Netsens s.r.l. shall not be liable for any special, indirect, incidental or consequential damages or losses, arising from any cause.

Please contact Netsens s.r.l. for any additional information concerning warranty.

## Disposal of Waste Electrical & Electronic Equipment:



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The symbol (crossed out wheeled-bin) on your product indicates that the product shall not be mixed or disposed with your household waste at their end of use.

The product shall be handed over to your local community waste collection point for recycling of the product.

For more information, please contact your Government Waste Disposal department in your country.

Inappropriate waste handling could possibly have a negative effect on the environment and human

health due to potential hazardous substances.

With your cooperation in the correct disposal of this product, you contribute to reuse, recycle and recover the product and our environment will be protected.

## Revisions:

Date	Release	Page/s	Modifications
21-09-2009	1.0	1-3	First Release
12-03-2017	1.1	1-3	Version update