

ecowitt®

Rain & Leaf Wetness Sensor



Model: WN35



<https://s.ecowitt.com/5R94DX>

Table of Contents

1. Ecowitt System Introduction	1
2. Getting Started	4
2.1 Parts list	4
2.2 Overview and size	4
2.3 Installing the battery	5
3. Wi-Fi Connection for the Gateways / Consoles	9
3.1 Pair with the consoles	9
3.2 Pair with the gateways	11
3.3 Replacing the old sensor	12
4. Cloud Upload and Remote Access	14

5. Set Email Alerts	15
6. Sensor Mounting	16
7. Features	21
8. Specification	21
9. Warranty & Caution	23
9.1 Warranty	23
9.2 FCC	24
10. Contact Us	28
10.1 After-sales service	28
10.2 Stay in touch	29

1. Ecowitt System Introduction

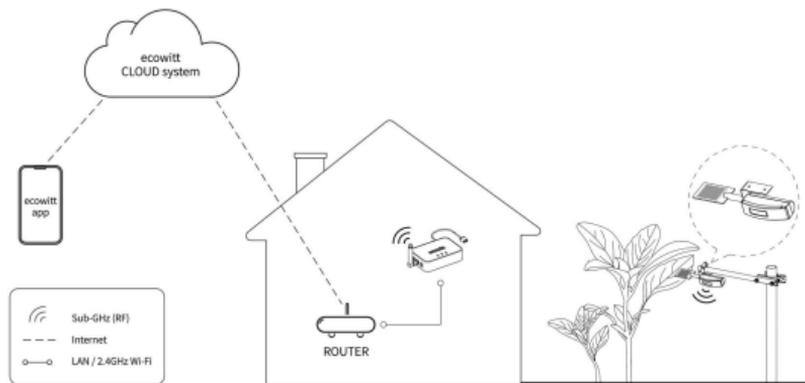


Figure 1 How Ecowitt System Works

Thank you for purchasing WN35 Rain & Leaf Wetness Sensor.

The Ecowitt WN35 Rain & Leaf Wetness Sensor monitors crop leaf moisture and can also be used for

early rainfall detection, designed to simulate real leaves when placed among foliage. It measures leaf wetness as a percentage and sends data to your weather station every 79.5 seconds. Monitoring leaf wetness is crucial in plant disease epidemiology, helping prevent fungal diseases and pests, guide irrigation, and improve plant health.

Ecowitt is very conscientious about your possible concerns regarding sending your data to the cloud. Not only do we not share your data with any third party, but we also offer you the possibility to manage your data locally with the help of a special tool, the WS View Plus app. You may refer to a special document regarding the WS View Plus app for more details.

Please read this manual and keep it for future reference to ensure the best product performance.

General Terms Used in the Manual:

Weather Station: Includes the console and sensors (or sensor array).

Gateway: Also known as a hub, it is a display-less console.

Transmitter: Refers to the sensor.

Receiver: Refers to the console.

RF: Radio frequency.

It refers to the ISM and SRD SUBG (Industrial, Scientific Medical, and Short-Range Devices frequency bands below 1 GHz) for communicating between the gateway and its sensors. This frequency is different from the 4G modem or Wi-Fi working frequency. To avoid interference, ISM/SRD bands are kept separate from 4G frequencies by national regulations. Typical ISM/SRD frequencies are 915 (Americas), 868 (Europe), 433 (worldwide), and 920 (Japan, Korea).

2. Getting Started

2.1 Parts list

One Rain & Leaf Wetness Sensor

One hose clamp for mounting to crossbar (crossbar not included)

One User Manual

2.2 Overview and size

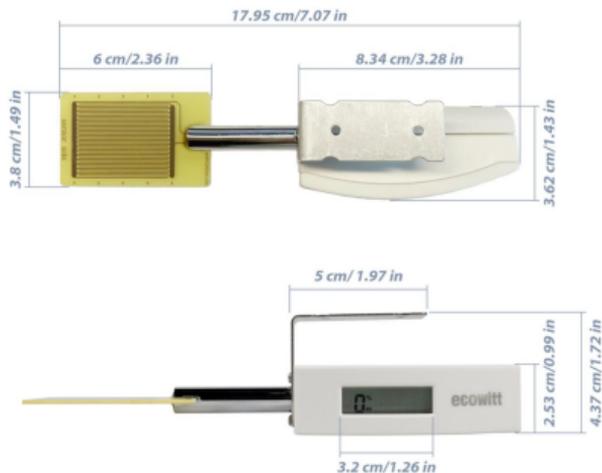


Figure 2: Size

2.3 Installing the battery

1. Remove the battery door on the back of the transmitter by removing the screws, as shown in Figure 3(**make sure the rubber seal remains intact when installing or removing the battery door**):

2. Insert one 1.5V AA battery (battery not included and be careful with the polarity: the flat side of the battery goes to the spring side of the battery compartment).

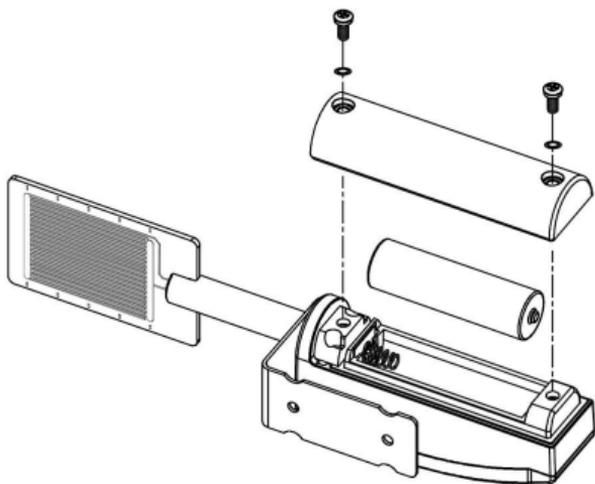


Figure 3: Battery installation

3. The display will show the following in sequence: 35 (indicating the model) — full display — finally showing the moisture reading and is normally updated every 79.5 seconds.

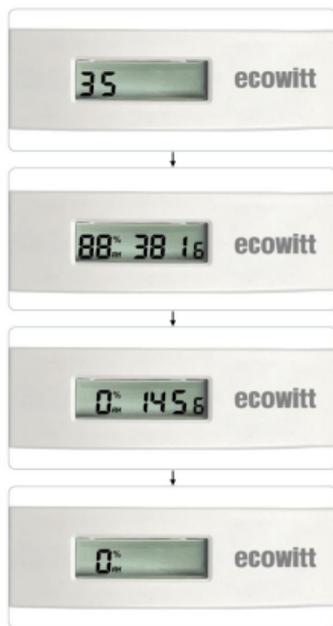


Figure 4

4. Note: If no reading appears on the screen, make sure the battery is inserted in the correct way and that the sensor has been properly reset. Do not install the battery backwards, as this can permanently damage the sensor.

5. Close the battery door and secure it with the screws.

6. Locating the Sensor ID

The ID is inside the battery compartment. You can write it down or label it on the sensor for easy reference.



Figure 5: Sensor ID

3. Wi-Fi Connection for the Gateways / Consoles

To view the sensor data on your mobile application and receive email alerts on our weather server, you need to pair this device with GW1100/GW1200/GW2000/GW3000/GW3010/WS6210/WS6210S/WS6006 Wi-Fi Gateways or HP2550/HP2560/HP3500/WN182X/WS38X0/WS39X0/WN19X0/WN1700 display consoles (sold separately).

3.1 Pair with the consoles

Compatible consoles:			
Console Model	Picture	Upload data	Display the data
HP2550		✓	✓
HP2560		✓	✓

HP3500		✓	✓
WN182X		✓	✓
WS38X0		✓	✗
WS39X0		✓	✗
WN19X0		✓	✗
WN1700		✓	✗

Table 1

3.2 Pair with the gateways

Compatible gateways	
Console Model	Picture
GW1100 / GW1200	
GW2000	
GW3000 / GW3010	
WS6210 / WS6210S	
WS6006	

Table 2

If the gateway/console is already in operation, and your WN35 SensorID are in Learning mode, simply power up the sensor, and the gateway/console will

automatically pick the sensor data. If the entry is set to “ Disabled ” you will have to register your WN35 manually.

Note: The gateway/console can support a maximum of 8 WN35 sensors(WS6006 can only support one). Each new sensor will be recognized as a new channel according to the **power-on sequence**. You may attach a label indicating the channel on each sensor for easy identification. The channel name can be edited both on the app and ecowitt.net (changes will not sync and should be edited separately on your device setup page on ecowitt.net).

3.3 Replacing the old sensor

If you want to use a new WN35 sensor to replace the old one (already configured on certain channel), please try the following:

1. Open the Sensor ID page on the Ecowitt APP, and find your old sensor ID.
2. Power off the old sensor and power on the new sensor.
3. Click **Re-register** on the Sensor ID page. Then the new sensor will be learned and the old sensor will be erased.



Figure 6

4. Cloud Upload and Remote Access

Once successfully connected to the Ecowitt Weather Server:

- View current moisture data & history records & graph on the ecowitt App and Ecowitt.net
- Receive email alerts from the server
- Remote monitoring with smart phone, laptop, or computer by visiting the website



Figure 7

5. Set Email Alerts

Once your device is added successfully on the Ecowitt Weather server, you may set alerts for the sensor on the website or app to get email notifications.

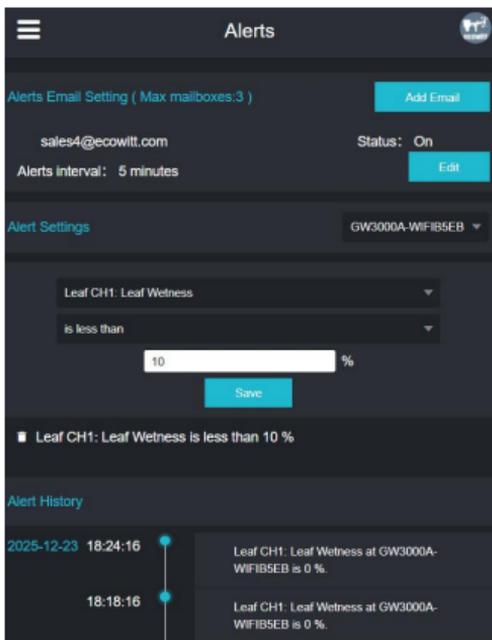


Figure 8

6. Sensor Mounting

This device can be mounted to a crossbar (not included; compatible diameter range: 19~29mm) with the included hose clamp.

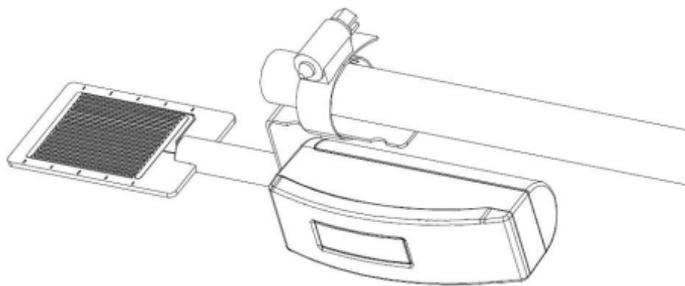


Figure 9

To mount the crossbar on a vertical pole (pole not included):

- Install the U-bolts set and crossbar (both not included) on a vertical pole as shown on Figure 10 and 11:

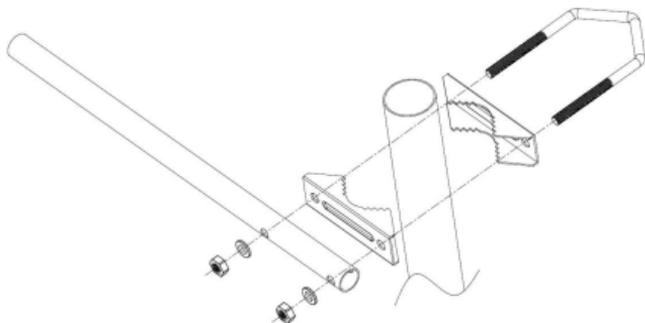


Figure 10

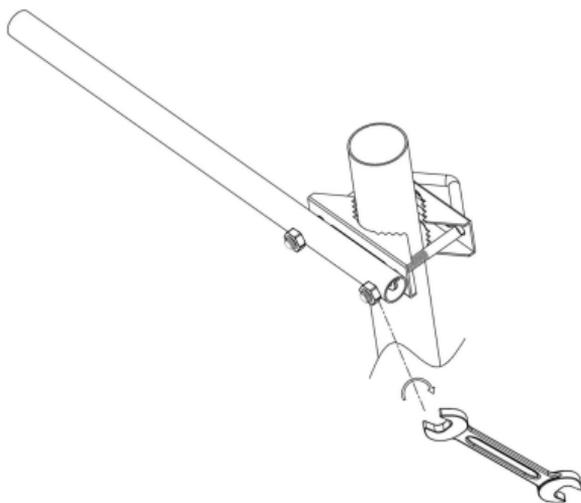


Figure 11: Crossbar mounting

When tight the nut: hand turn the nut until no further turns to be turned, then use a wrench to turn $1/3 \sim 1/2$ turn and no more.

Mount the unit to the crossbar (not included) with the included hose clamp:

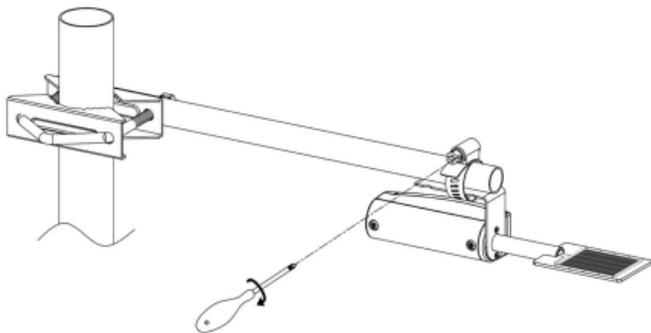


Figure 12: Sensor mounting to crossbar

Orientation or Tilt: Make sure the sensing side (PCB grid visible) is facing upwards, and adjust the sensor to have the sensor leveled same as the leaf to be monitored. Usually it should be in the range between 0 – 30 degrees. And this will

simulate the real wetness condition matched against leaves.

The drying of a rain & leaf wetness sensor is affected significantly by its angle of deployment. When the sensor is exposed horizontally, a puddle of water often accumulates that covers the entire sensor surface. This does not normally occur on leaves, except for those that have cup-like shapes.

The optimal sensor placement should be with 60 degrees tilt with north facing to simulate the condition in most ideal way:

<https://cdnsiencepub.com/doi/10.4141/cjps78-027>

WN35 can also be used for early rainfall detection. For rainfall measurement, the sensor blade needs to be tilted by approximately 70° from the horizontal position with the detection side facing up.

7. Features

- This sensor detects the moisture level of the nearby leaf or plant.
- Long wireless range up to 300 feet (100 meters) in open areas.
- Transmits readings every 79.5 seconds.
- LCD screen display for current reading.

8. Specification

Model	WN35
Name	Rain & Leaf Wetness Sensor
Dimensions	179.5x43.7x43.2mm
Probe Sensor Dimensions	60*38*1.6mm
Weight	86.2(g)
Material of Plastic Casing	ABS+PC
Probe Shell Material	FR4
Measurement Principle	Capacitive
Humidity Metering Range	0~99%
Humidity Metering Accuracy	±10%

Humidity Metering Resolution	1%
Reading Update Interval	79.5 seconds
RF Connection Frequency	920/915/868/433MHz (depending on local regulations)
Wireless transmitting range	Over 100 meters(300 feet) in open areas
Operating Temperature Range	-10°C to 50°C(14°F to 122°F)
Protection Rating	IP66
Power	1xAA Battery (not included)
Battery life	1 Year

Table 3

9. Warranty & Caution

9.1 Warranty

We disclaim responsibility for any technical error, printing error, or the consequences thereof.

All trademarks and patents are recognized.

We provide a 2-year limited warranty on this product against manufacturing defects or defects in materials and workmanship.

This limited warranty begins on the original date of purchase, is valid only on products purchased, and is only to the original purchaser. The purchaser must contact us for problem determination and service procedures to receive warranty service.

This limited warranty covers only actual defects within the product itself. It does not cover the cost of installation or removal from a fixed installation,

standard set-up, or adjustments, claims based on seller misrepresentation, or performance variations resulting from installation-related circumstances.

9.2 FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions: (1) this device should not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection

against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is

connected.

-- Consult the dealer or an experienced radio/TV technician for help.

To maintain compliance with RF Exposure guidelines, This equipment should be installed and operated with a minimum distance between 20cm of the radiator and your body. Use only the supplied antenna.

IC Caution:

English:

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science, and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two

Conditions:

1. This device may not cause interference.

2. This device must accept any interference, including interference that may cause the undesired operation.

French:

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Manufacturer: Shenzhen Fine Offset Electronics Co., Ltd.

Address: 4/F, Block C, JiuJiu Industrial City, Shajing Town, Baoan District, Shenzhen City, China

10. Contact Us

10.1 After-sales service

Order Issues:

If you encounter any missing or incorrect shipments of Ecowitt products purchased, please reach out to the respective platform's customer service from the store where you bought the product for assistance.

Usage Inquiries:

Our product is continuously changing and improving, particularly online services and associated applications. To download the latest manual, and additional help, and for any issues related to product usage feel free to contact our customer support team at support@ecowitt.com. We are committed to providing assistance and resolving any concerns you may have.

10.2 Stay in touch

Ask questions, watch setup videos, and provide feedback on our social media outlets. Follow Ecowitt on Discord, YouTube, Facebook and Twitter.



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