

Leaf Wetness Sensor

Model: WN35BN, WH51LW, WN35

Contents

1. Getting Started.....	4
1.1 Parts List.....	4
2. Overview	4
2.1 Features	5
3. Setup Guide	7
3.1 Installing battery	7
4. Sensor Placement	9
5. Wi-Fi Configuration with gateway	11
5.1 Pair with Gateway	11
5.2 Wi-Fi Connection for the Gateway.	13

6. View Online Data with AWN app	13
7. Set Email Alerts.....	15
8.Specification.....	16

1. Getting Started

1.1 Parts List

One Leaf Wetness Sensor

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

One User Manual

2. Overview

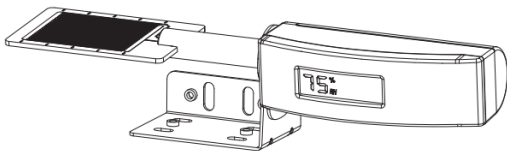


Figure 1: Leaf Wetness Sensor

2.1 Features

Leaf Wetness Sensor

- 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
- LCDscreen display for current reading.

When paired with a Observer2.0/3.0 Wi-Fi Gateway:

- View leaf wetness reading on the Live Data page of the AWN app (requires the gateway and your phone is using the same Wi-Fi network)
- Up to 8 channels supported. Channel names can be edited on the app.

- Battery level information displayed on the AWN App

When paired with a Weather Station Console

(WS-2000/WS-5000/Observer2.0/3.0):

- View leaf wetness data in real-time on the Display
- Up to 8 channels supported. Channel names can be edited on the console(for WS-2000/WS-5000 only).

When uploaded to Ambient Weather Server:

- View current moisture data & history records & graph on the website
- Receive email alerts from the server

- Remote monitoring with smart phone, laptop, or computer by visiting the website

3. Setup Guide

3.1 Installing battery

1. Remove the battery door on the back of the transmitter by removing of the screws, as shown in Figure 2:

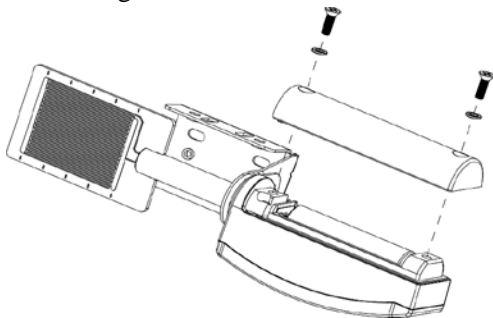


Figure 2: Battery installation

2. Insert one 1.5V AA battery (be aware of polarity: flat side of the battery go to the spring side of the battery compartment).

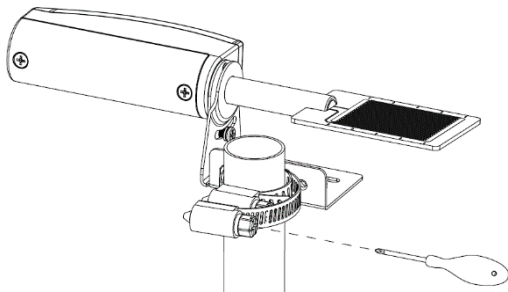
The moisture reading will display on the LCD screen immediately and normally update every 79.5 seconds (the sensor transmission update period).

Note: If no reading on the screen, make sure the battery is inserted the correct way or a proper reset happens. Do not install the battery backwards. You can permanently damage the sensor.

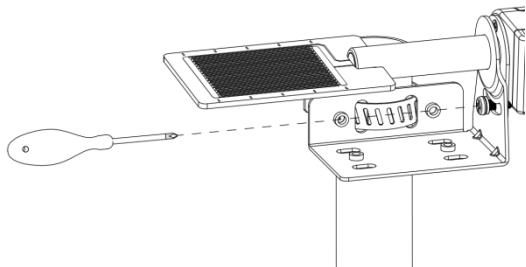
4. Close the battery door by installing the screws.

4. Sensor Placement

This device can be mounted to a pole (compatible diameter range: 25.4~50.8mm ; not included) with the included hose clamp. (The pole and installation set sold separately.)



Then adjust the angle according to the leaf surface:



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.

5. Wi-Fi Configuration with gateway

To view the sensor data on your mobile application and receive email alerts on our ambient server, you need to pair this device with our WeatherHub Wi-Fi Gateway or WS-2000/WS-5000 or other compatible Weather Stations (sold separately).

5.1 Pair with Gateway

If the WeatherHub has been in operation, and you have never had any WH51 sensor setup before, just power up the sensor and WeatherHub will pick the sensor data automatically.

Note: The gateway can support max 8 WH51 sensors. Each new sensor will be recognized as a new channel according to the Power-on

sequence. You may attach a label of the channel on each sensor for distinction. The channel name can be edited both on the app and ambientweather.net(will not sync, and it should be edited on your device setup page on ambientweather.net separately).

If you want to use a new WH51 sensor to replace the old one(already configured on certain channel), please try the following:

1. Open the Sensor ID page on the AWN 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.

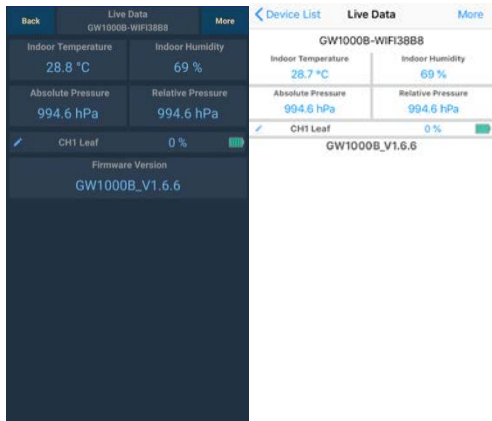
Then the new sensor will be learned and the old sensor will be erased.

5.2 Wi-Fi Connection for the Gateway

For this part, please refer to the manual of the ObserverIP2.0/3.0 or WeatherHub Wi-Fi gateway.

6. View Online Data with AWN App

When the Wi-Fi configuration is done(to tell the gateway to be hooked to your WiFi network), your sensor data as well as the sensor battery voltage information will be displayed on AWN App at the live data page.



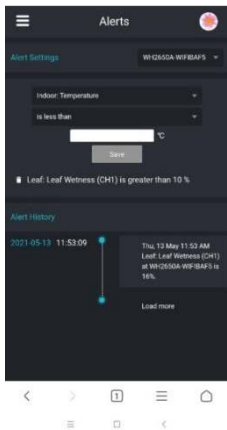
Note: It requires your phone and the gateway to be in the same network when viewing your sensor live data on the Awn app. Live data is referring to current data received by the gateway. Live data is not stored on Awn app. However data was always pushed and saved

on <https://ambientweather.net/cloud>(under your registered account, and data can always be accessed via your browser.)

Detailed operation instructions can be found on the WeatherHub or ObserverIP2.0/3.0 manual.

7. Set Email Alerts

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



8.Specification

Power: 1x1.5V AA battery(not included)

Frequency: 433 / 868 / 915 MHz depending on location (North American: 915 MHz; Europe: 868MHz; Other areas: 433MHz)

Wireless transmitting range: 100M (300feet)

Sensor reporting interval: 79.5seconds

Sensing moisture: 0~99%; Accuracy: +/-10%

Battery life: 12 months minimum

Equipment	Leaf Wetness Sensor
Model Name	WN35BN
Family Model	WH51LW, WN35
Operation Frequency:	915MHz
Modulation Type:	FSK
Antenna Designation:	Spring antenna
Antenna Gain(Peak)	2.15dBi
Battery	DC1.5V AA Battery
Hardware version	WN35_WHP0254B1V04
Software version	Software WN35_0x851C_(00.80)_ V2.1.2.HPO checksum=0x851C

FCC WARNING

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

Any 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 into 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 FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.

FCC ID: WA5WN35BN