5 IN 1 PROFESSIONAL WEATHER STATION

(NO SOLAR POWERED AND NO UV SENSOR)

Model: WN67

*Please scan the QR code to read English manual and keep it for future reference

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Instruction manuals
https://s.ecowitt.com/46Y36A

Help

Our product is continuously changing and improving, particularly online services and associated applications. To download the latest manual and additional help, please contact our technical support team:

support@ecowitt.com
support.eu@ecowitt.net (EU/UK)

MADE IN CHINA

Table of Contents

1 Introduction

Thank you for your purchase of this Weather Station. The following user guide provides step-by-step instructions for installation, operation, and troubleshooting.

2 Warnings and Cautions

Warning: Any metal object may attract a lightning strike, including your weather station mounting pole. Never install the weather station in a storm.
Warning: Installing your weather station in a high location may result in injury or death. Perform as much of the initial check and operation on the ground and inside a building or home. Only install the weather station on a clear, dry day.

3 Pre-Installation Checkout and Site Survey

3.1 Pre-Installation Checkout

Before installing your weather station in the permanent location, we recommend operating the weather station for one week in a temporary location with easy access. This will allow you to check out all of the functions, ensure proper operation, and familiarize yourself with the weather station and calibration procedures. This will also allow you to test the wireless range of the weather station.

3.2 Site Survey

Perform a site survey before installing the weather station. Consider the following:
1. You must clean the rain gauge every few months and change the batteries every 1 year. Provide easy access to the weather station.
2. Avoid radiant heat transfer from buildings and structures. In general, install the sensor array at least 5' from any building, structure, ground,

or rooftop.

3. Avoid wind and rain obstructions. The rule of thumb is to install the sensor array at least four times the distance of the height of the tallest obstruction. For example, if the building is 20' tall, and the mounting pole is 6' tall, install 4 x (20 – 6)' = 56' away.

4. Wireless Range. The radio communication between receiver and transmitter in an open field can reach a distance of up to 100 meters, providing there are no interfering obstacles such as buildings, trees, vehicles, or high voltage lines. Wireless signals will not penetrate metal buildings. Under most conditions, the maximum wireless range is 100 meters.

5. Radio interference such as PCs, radios or TV sets can, in the worst case, entirely cut off radio communication. Please take this into consideration when choosing console or mounting locations. Make sure your display console is at least five feet away from any electronic device to avoid interference.

4 Getting Started

4.1 Contents

If components are missing from the package, or broken, or any problem during the operation, please contact customer service to resolve the issue.

QT	Item Description
1	Outdoor Sensor with built-in: Thermo-hygrometer / Rain Gauge / Wind Speed Sensor/ Wind Direction Sensor.
1	Wind speed cup (to be attached to outdoor sensor body).
1	Wind vane (to be attached to outdoor sensor body).
2	U-Bolts for mounting on a pole.
4	Threaded nuts for U-Bolts (M6 size).
1	Metal mounting plate to be used with U-Bolts.
1	Wrench for M6 bolts.
1	User manual (this manual).

4.2 Sensor Array Set Up
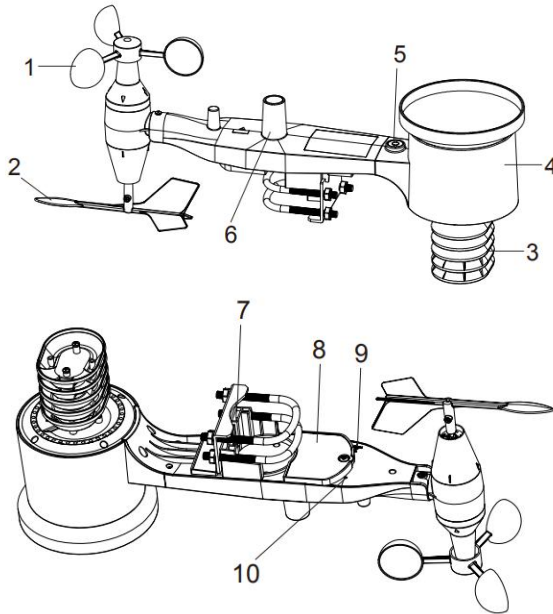
Figure 1: Sensor assembly components

|			
1	Wind speed cups	6	Antenna
2	Wind vane	7	U-Bolts
3	Thermo- and hygro-meter sensors	8	Battery compartment door
4	Rain collector	9	Reset button
5	Bubble level	10	LED (red) to indicate data transmission

Table 2: Sensor assembly detailed items

## 4.2.1 Install U-bolts and mounting pole

Installation of the U-bolts, which are in turn used to mount the sensor package on a pole, requires installation of an included metal plate to receive

the U-bolt ends. The metal plate, visible in Figure 2, has four holes through which the ends of the two U-Bolts will fit. The plate itself is inserted in a groove on the bottom of the unit. Note that one side of the plate has a straight edge (which goes into the groove), the other side is bent at a 90-degree angle and has a curved profile (which will end up "hugging" the mounting pole). Once the metal plate is inserted, remove nuts from the U-Bolts and insert both U-bolts through the respective holes of the metal plate as shown in Figure 2.
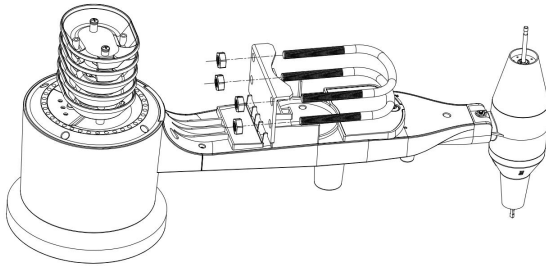
Figure 2: U-Bolt installation

Loosely screw on the nuts on the ends of the U-bolts. You will tighten these later during the final mounting. The final assembly is shown in Figure 3.
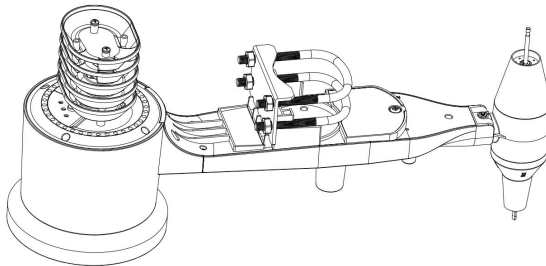
Figure 3: U-Bolts and nuts installed

The plate and U-Bolts are not yet needed at this stage but doing this now may help avoid damaging wind vane and wind speed cups later on.

4.2.2 Install wind vane

Push the wind vane onto the shaft on the bottom of the sensor, until it stops moving further, as shown in figure 4.

Tighten the set screw, with a Philips screwdriver (size PH0), until the wind van cannot be removed from the axle, as shown in figure 4. Make sure the wind vane spins freely. The wind vane's movement has a small amount of friction, which is helpful in providing steady wind direction measurements.
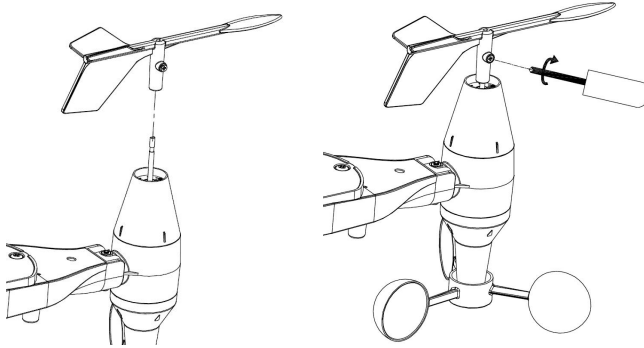
Figure 4: Wind vane installation diagram

4.2.3 Install wind speed

Push the wind speed into the shaft as shown in figure 5.

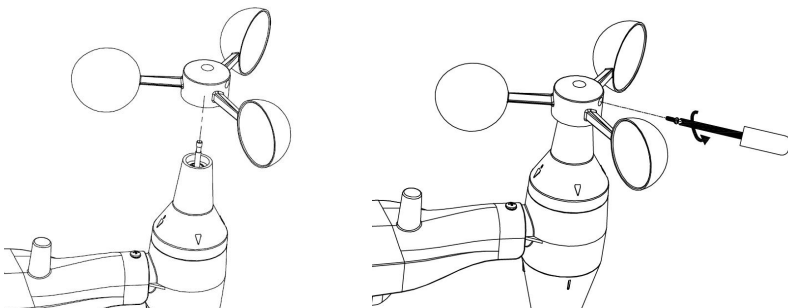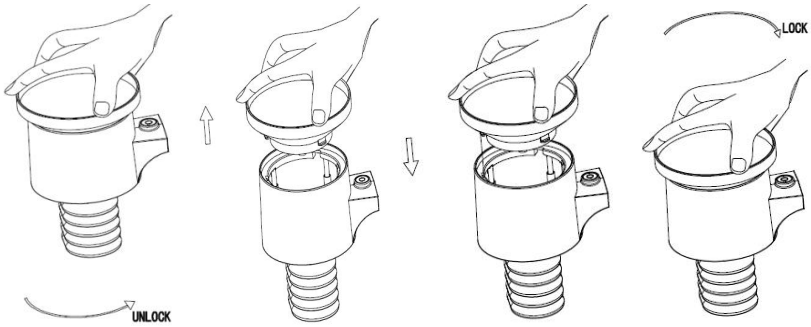Tighten the set screw with a screwdriver. Make sure the wind speed can spin freely.

**Figure 5: Wind speed cup installation diagram**

4.2.4 Install Rain Gauge

Install the rain gauge funnel. Rotate clockwise to attach the funnel to the outdoor sensor.

Figure 6: Rain gauge installation and maintenance

4.2.5 Install Batteries

Insert 2 AA batteries in the battery compartment. The LED indicator on the back of the transmitter will turn on for four seconds and normally flash once every 16 seconds (the sensor transmission update period).
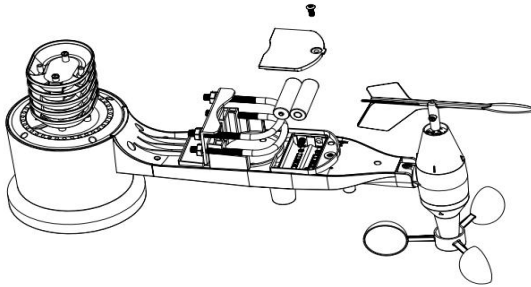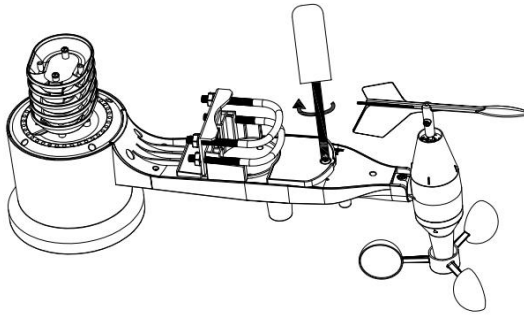
Figure 7: Battery installation diagram

Note: If no LED light up or is permanently on, make sure the batteries are inserted the correct way or a proper reset has happened. Do not install the batteries backward. You can permanently damage the outdoor sensor

Note: We recommend 1.5V lithium batteries for cold weather climates, but alkaline batteries are enough for most climates. We do not recommend rechargeable batteries. They have lower voltages, they do not operate well at wide temperature range, and do not last as long, resulting in poorer reception.

4.2.6 Mount assembled outdoor sensor package

### 4.2.6.1 Before you mount

Before proceeding with the outdoor mounting detailed in this section, you may want to skip to setup instructions in section and onwards first, while you keep the assembled outdoor sensor package nearby (although preferably not closer than 5 ft. from the console). This will make any troubleshooting and adjustments easier and avoids any instance or interference related issues from the setup.

After setup is complete and everything is working, return here for outdoor mounting. If issues show up after outdoor mounting they are almost certainly related to distance, obstacles etc.

4.2.6.2 Mounting

You can attach a pipe to a permanent structure and then attach the sensor package to it (see Figure 8). The U-Bolts will accommodate a pipe diameter of 1-2 inches (pipe not included).
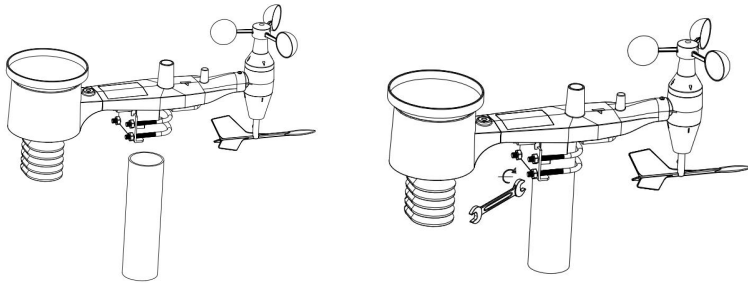
Figure 8: Sensor package mounting diagram

Finally, place the sensor package on top of the prepared mounting pipe. The U-Bolts should be loose enough to allow this but loosen the nuts as necessary.

Once placed, the hand tightens all four nuts, taking care to do so evenly.

Now you will need to align the whole package in the proper direction by rotating it on top of the mounting pipe as needed. Locate the arrow labeled "WEST" that you will find on top of the sensor package right next to the light sensor. You must rotate the whole sensor package until this arrow points due West. To achieve proper alignment, it is helpful to use a compass (many cell phones have a compass application).

Once rotated in the correct orientation, lightly tighten the bolts a little more (use a wrench) to prevent further rotation.

Note: Use the bubble level next to the rain sensor to make sure the sensor array is completely level. If the sensor is not level then the rain gauge will measure inaccurately.

4.2.7 Reset Button and Transmitter LED

In the event that the sensor array is not transmitting, reset the sensor array. With an open-ended paperclip, press and hold the RESET BUTTON for three seconds and resynchronize with the console by powering down and up the console. Please put the console with the sensor array about 3 meters away.
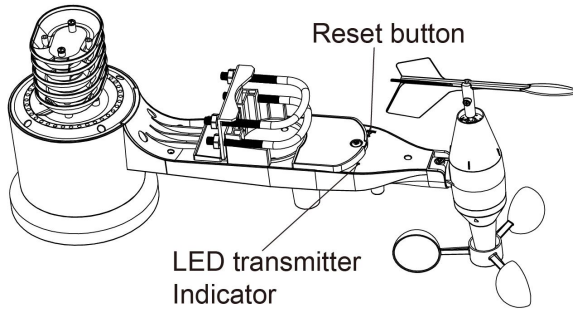

Figure 9: Reset button and Transmitter LED location

5 Specification

Measurement	Range	Accuracy	Resolution
Wind speed	0m/s to 50m/s	<5m/s, ±1m/s; ≥5m/s, ±10%	0.1m/s
Wind direction	0° to 359°	<2m/s, ±10°; ≥2m/s, ±7°	1°
Temperature	-40°C to 60°C	±1°C	0.1°C (± 0.1°F)
Humidity	1% to 99%	±4%	0.01
Rain	0~9999	±10%	0.1mm

● Sensor (backup): 2 x AA 1.5V battery (not included)

6 Maintenance

The following steps should be taken for proper maintenance of your station.

1. Clean the rain gauge once every 3 months. Rotate the funnel counter-clockwise and lift to expose the rain gauge mechanism, and clean with a damp cloth. Remove any dirt, debris and insects. If bug infestation is an issue, spray the array lightly with insecticide.
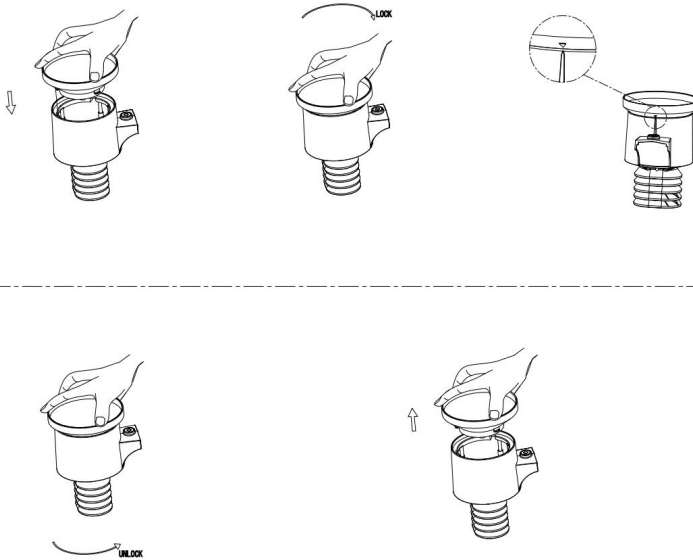
Figure 10: Rain gauge installation and maintenance

2. Replace batteries every 1-2 years. If left in too long, the batteries may leak due to environmental challenges. In harsh environments, inspect the batteries every 3 months.
3. When replacing the batteries, apply a corrosion-preventing compound on the battery terminals, available at Amazon and most hardware stores.
4. In snowy environments, spray the top of the weather station with anti-icing silicon spray to prevent snow build-up.

7 Troubleshooting Guide

Look through the following and locate an issue or problem you are experiencing in the left column and read possible solutions in the right column.

Problem	Solution
The outdoor sensor array does not communicate with the display console..	The sensor array may have initiated properly and the data is registered by the console as invalid, and the console must be reset. Press the reset button as described in Section 5.2. With an open-ended paperclip, press the reset button for 3 seconds to resync the console with the sensor array about 10 feet away. The LED next to the battery compartment will flash every 16 seconds. If the LED is not flashing every 16 seconds⋯ Replace the batteries in the external sensor array. If the batteries were recently replaced, check the polarity. If the sensor is flashing every 16 seconds, proceed to the next step. There may be a temporary loss of communication due to reception loss related to interference or other location factors, or the batteries may have been changed in the sensor array and the console has not been reset. The solution may be as simple as powering down and up the console (remove the AC power and batteries, wait 10 seconds, and reinsert AC power and batteries).
The temperature sensor reads too high in the daytime.	Make sure the sensor array is not too close to heat-generating sources or strictures, such as buildings, pavement, walls, is air conditioning units.Use the calibration feature to offset installation issues related to radiant heat sources. Reference Section 10.6.
The rain gauge reports	An unstable mounting solution (sway in the

rain when it is not raining	mounting pole) may result in the tipping bucket incorrectly incrementing rainfall. Make sure you have a stable, level mounting solution.

8 Warranty Information

We disclaim any responsibility for any technical error or printing error, or their consequences.
All trademarks and patents are recognized.

We provide a 1-year limited warranty on this product against manufacturing defects in materials and workmanship.

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

This warranty covers only actual defects within the product itself and does not cover the cost of installation or removal from a fixed installation, normal set-up or adjustments, claims based on misrepresentation by the seller or performance variations resulting from installation-related circumstances.