ecowitt®

Lightning Detector Sensor

Model: WH57

https://s.ecowitt.com/JET5WJ

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1. Ecowitt System Introduction

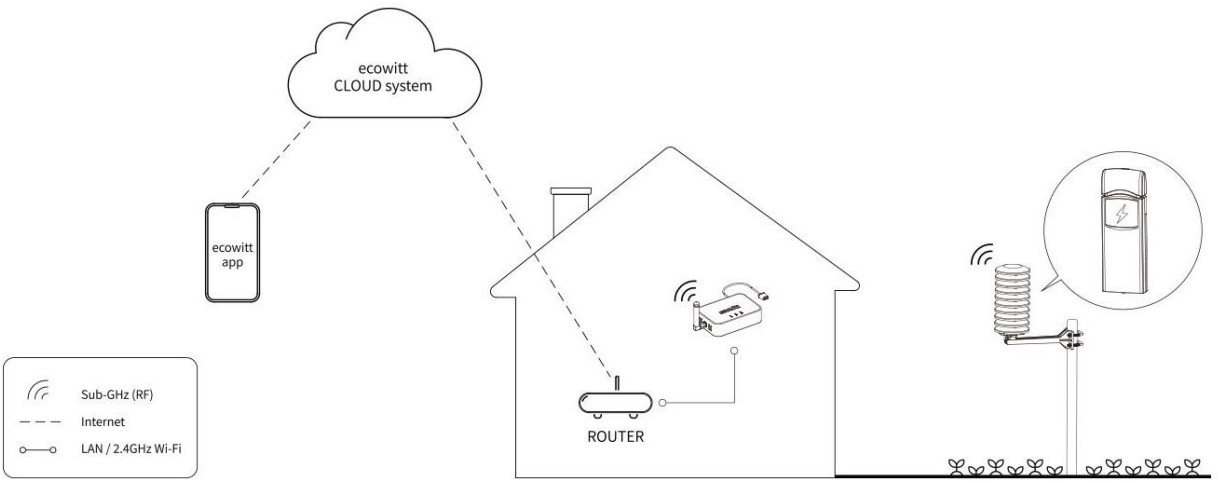

Figure 1 How Ecowitt System Works

Thank you for purchasing this Lightning Detector Sensor. 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 WSview Plus app / Ecowitt app. You may refer to these app's instructions 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 Lightning detection sensor
One Solar radiation shield
One Mounting bracket
One Set of mounting screws
One User manual

Only install the sensor on a clear day when no rain or lightning is likely to happen. Fatal injury can be caused if this requirement.

2.2 Overview and Size(Unit:mm/inch)

Figure 2 Lightning Sensor

2.3 Installing the battery

1. Remove the battery door on the back of the transmitter by taking off the cover, as shown in Figure 3.

Figure 3 Battery Installation

! Note:

The **WH57 is designed to operate with a standard alkaline battery**. Using a lithium battery may result in a **higher supply voltage**, which could affect the sensor's normal operation and cause connection failures. If connection issues occur, replace the lithium battery with a standard alkaline battery and try again.

2. Before inserting the batteries, find the dip switches instruction above the battery compartment and set the following configuration:

Indoor/outdoor: Dip switch 1, the default setting is for “outdoor”. Regardless of whether the sensor is placed indoors or outdoors, set this dip switch to “outdoor” to prevent the system from picking up noise and triggering false lightning.

Antenna: Dip switch 2, the default setting is for long antenna, as this is the antenna used inside. Please do not modify this dip switch setting.

Sensitivity: Dip switch 3,4. The default setting is for sensitivity between high and mid. If you think the

sensor picked up a lot false lightning strikes, then please try with sensitivity Mid or Low. If sensor missed lightning detection, you may try with high sensitivity setting. If set to high sensitivity and still has missed lightning detection, then you may try with **Dip switch 1** for “Indoor” setting to make the system even with higher gain and make the system most sensitive.

The **default** for all 4 switches is in the **Down Position**

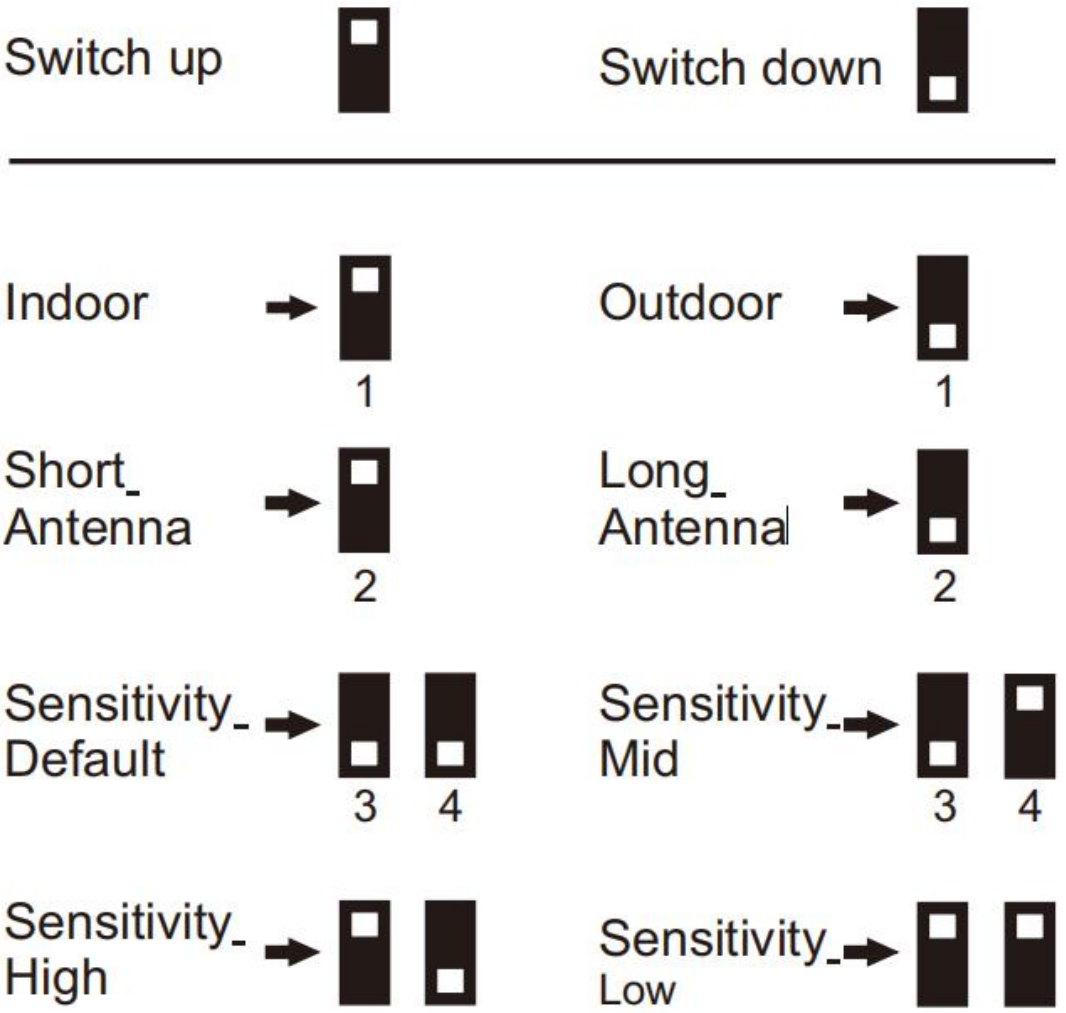

Figure 4 Dip Switch diagram

3. Sensor ID Locating

The ID is printed on a label inside the battery compartment as illustrated.

You can writing down or labeling this ID on the sensor body for easy reference.

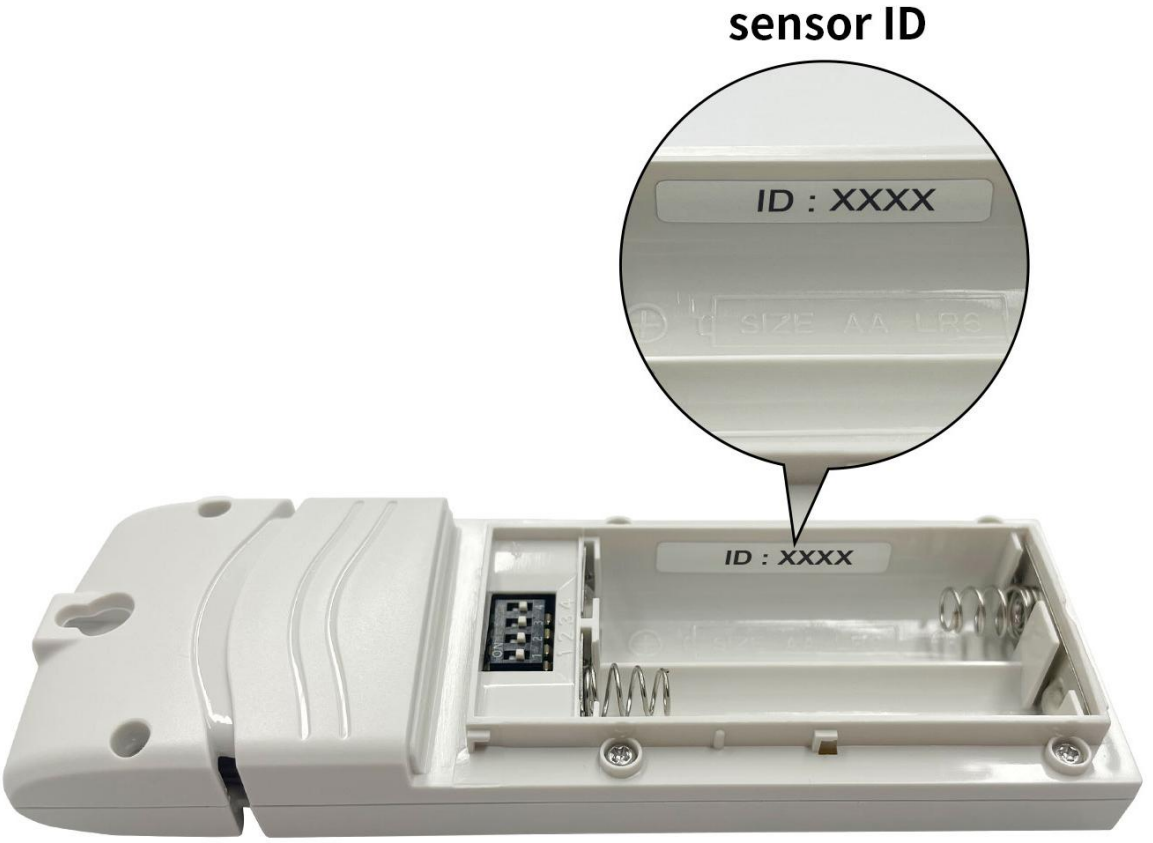

Figure 5 Lightning Sensor

4. Insert two 1.5V AA batteries.
The LED indicator will turn on for four seconds and normally flash once every 79 seconds (the sensor transmission update period).

Note: If no LED lights up or stays lit permanently, make sure the batteries are inserted the correct way or a proper reset happens. Do not install the batteries backwards.
You can permanently damage the sensor.
Note: NiMh rechargeable batteries are prohibited from use on this device. Li-ion rechargeable is recommended.
5. Close the battery door.

2.4 LED Indicator

Flash (each): Indicates one packet of RF data from a sensor was received or one lightning strike was detected.
Flash (for 2S): Indicates detection of noise signals, prompting the user that the current location has a high level of noise. You can either set **dip switch 3, 4 to mid** or **low sensitivity level**, which raises to a higher threshold level.
For noise filtering, you can find another location with a lower noise level.
Steady on: Indicates detection of interference signals. It means there are lightning-like signals around. You should

try to find interference sources like motors, switches for all kinds of electrical appliances, and place the sensor far away from these interference sources.

Steady Off: Indicates no triggering of the lighting signal, nor noise, or interference

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, pair this device with our Wi-Fi Gateways or Consoles (each sold separately).

3.1 Pair with the consoles

Compatible consoles:			
Console Model	Picture	Upload data	Display the data
HP2550		✔	✔
HP2560		✔	✔
WN182X		✔	✕
WS38X0		✔	✕
WS39X0		✔	✕
WN1920/1980		✔	✕

Table 1

3.2 Pair with the gateways

Compatible gateways			
			
GW1200	GW3000	WS6210	GW3010

Table 2

If the gateway has been in operation and you have never had any WH57 sensor setup before, just power up the sensor, and the gateway will pick up the sensor data automatically.

Wi-Fi Connection for the Gateway

For this part, please refer to the GW1100/GW1200/GW2000/GW3000/GW3010 Wi-Fi gateway manual.

According to the Power-on sequence, each new sensor will be recognized as a new channel. Suppose you prefer to assign a specific channel number to a particular sensor;

you can manually input the sensor ID related to that channel number. You may attach a label to the channel on each sensor for distinction.

Figure 6

The channel can be edited both on the app and ecowitt.net (The edited name on the app will not sync to the ecowitt.net website and should be edited on your device setup page on ecowitt.net separately).

3.3 Replacing the old WH57 sensor

If you want to use a new WH57 sensor to replace the old

one (already configured on a specific channel), please try the following:

- Locate the Sensor ID(reference to Section 2.4 Sensor ID Locating)
- Open the Sensor ID page on the Ecowitt app, and find your old sensor ID.
- Power off the old sensor first. Then, power on the new sensor.
- Click Re-register to learn the new sensor, or click the edit button to input the new sensor ID, and click the save button to lock on the latest sensor.

3.4 Device Pairing and Data Display Capabilities

1. When paired with certain consoles (WN1920 / WN1980 / WS3820 / WS3900 / WS3910/ WN1820/ WN1821):

- The sensor data is not displayed on the console screen.
- Data is uploaded directly to the Ecowitt Cloud, where it can be viewed via the online dashboard.

2. When paired with other compatible consoles

(HP2550 / HP2560):

- Lightning detection data can be viewed in real-time directly on the console display.

3. 1-Channel Support:

- Supports up to 1 channel.
- Channel names can be customized via the console.

4. Cloud Upload and Remote Access

4.1 View Online Data with the Ecowitt App

Once successfully connected to the Ecowitt Weather Server:

- Sensor data and battery status are shown on the Ecowitt App dashboard.
- Current readings, history, and graphs are available.
- Remote access is supported via smartphone, laptop, or computer.

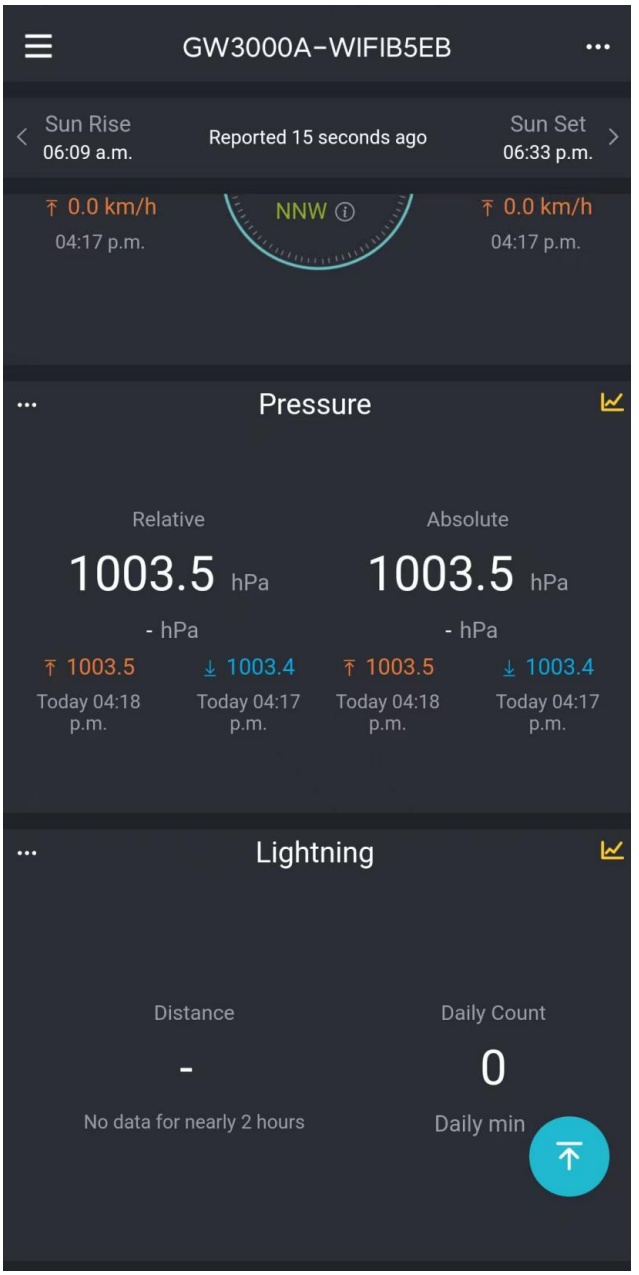
GW3000A-WIFIB5EB
Sun Rise
06:09 a.m.
Reported 15 seconds ago
Sun Set
06:33 p.m.
0.0 km/h
04:17 p.m.
NNW
0.0 km/h
04:17 p.m.
Pressure
Relative
1003.5 hPa
- hPa
1003.5
Today 04:18 p.m.
1003.4
Today 04:17 p.m.
Absolute
1003.5 hPa
- hPa
1003.5
Today 04:18 p.m.
1003.4
Today 04:17 p.m.
Lightning
Distance
-
No data for nearly 2 hours
Daily Count
0
Daily min

Figure 7

5. Sensor Mounting

The sensor should be placed outdoor only, as the device will easily pick up electrical sparking interference and will cause no triggering or false triggering. It is recommended to install it high above your roof, or at least 5 m away from your home.

Two mounting options are available

Make sure the correct screw is used for each mounting direction.

Option A: Horizontal Mounting

Use the **short** flat-head screw for horizontal mounting.

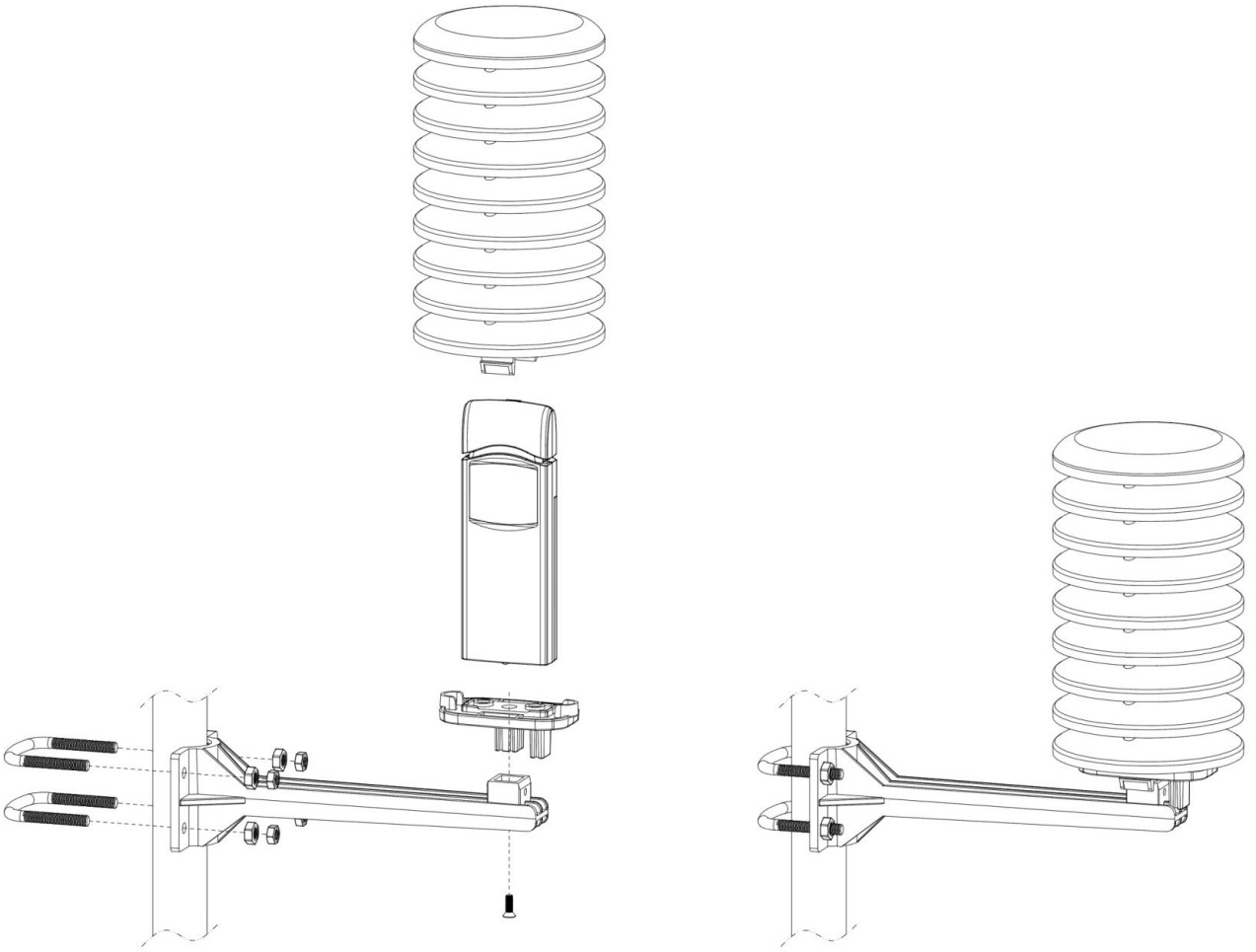

Figure 8 Horizontal Mounting

Option B: Vertical Mounting

Use the **long** flat-head screw for vertical mounting.

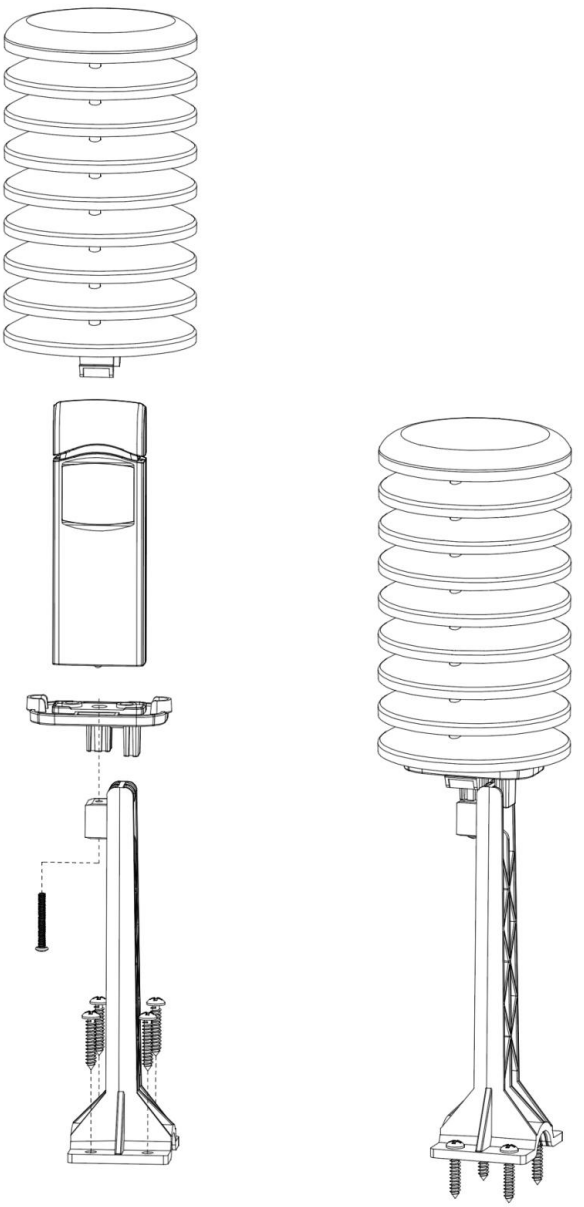

Figure 9 Vertical Mounting

Note:
Make sure the sensor is mounted vertically and not lying down on a flat surface.
This will ensure optimum reception and rainwater protection.

6. Features

Large-Area Monitoring: With an extensive 40 km (25-mile) detection range, the WH57 provides a crucial early warning, allowing you to monitor the development and trajectory of lightning activity well in advance.

Precision Strike Data & Logging: It meticulously records the distance and timestamp of each lightning strike, along with a total count. This data offers valuable insights for real-time awareness and historical analysis of storm patterns.

Seamless Real-Time Alerts via Ecowitt Cloud: When connected to your Wi-Fi Gateway or console, the WH57

automatically uploads data to the free Ecowitt cloud. Receive prompt notifications and view all lightning information remotely on the Ecowitt App for instant situational awareness.

Outdoor-Optimized Design for Reliability: To ensure accurate readings and minimize false alarms from common electrical interference, the WH57 features a rugged, moisture-resistant housing with an included rain cover. For optimal performance, outdoor installation away from household electronics is recommended.

Effortless Wireless Operation: Enjoy true plug-and-play functionality with up to one year of battery life from just 2 AA batteries. It maintains a stable wireless connection up to 100 meters (300 feet) to your gateway in open areas, allowing for flexible placement.

7. Specification

Model	WH57
Name	Lightning Detector Sensor
Main Body Dimensions	123x42x18(mm)
Material of Plastic Casing	ABS
Reading Update Interval	79 seconds
RF Connection Frequency	920/915/868/433MHz (depending on local regulations)
RF Wireless Range	Over 100 meters (in open areas)
Lightning detection range:	0-25 miles/0-40km
Working temperature:	40~50℃(-40~122℉)
Power Supply	2 AA Batteries (not included)
Battery Life	1 Year

Table 3

Note: Once lightning strikes are detected, the LED light will flash once, and the ecowitt.net will push email alerts at the same time.

8. Warranty & Caution

8.1 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.

8.2 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.

Manufacture: Shenzhen Fine Offset Electronics Co., Ltd.
Address: 4/F, Block C, JiuJiu Industrial City, Shajing Tow n, Baoan District, Shenzhen City, China

9. Contact Us

9.1 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.

9.2 Stay in Touch

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