ecowitt®

Wireless Multi-channel Thermometer and Hygrometer Sensor

Model: WN31/WN31(with SHT35 probe)

https://s.ecowitt.com/QMDADS

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1.Introduction

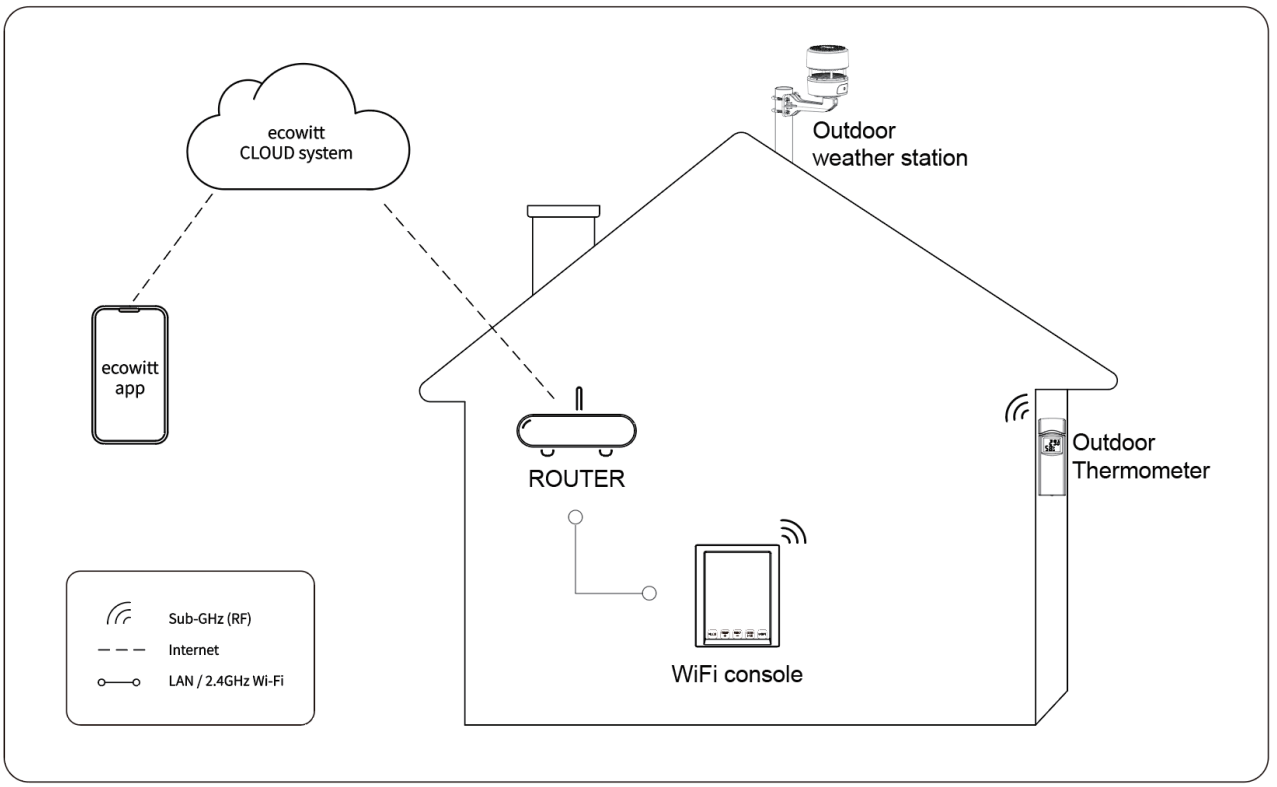


Figure 1

Thanks for purchasing this WN31/WN31 (with SHT35 probe) wireless thermometer and hygrometer sensor. This device measures temperature and humidity and supports up to 8 channels (One unit for one channel, optional sensors sold separately).

Please note that this sensor cannot be used alone. The data can be transmitted via the Ecowitt Wi-Fi Gateway or displayed on a receiver console (sold separately). Once the Wi-Fi

configuration is complete, the data can be viewed on the Ecowitt/ WS View Plus app or on the receiver console.

To ensure the best product performance, I'd like you to please read this manual and keep it for future reference.

General Terms Used in the Manual:

Gateway:

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

Receiver:

Refers to the console.

RF:

Radio frequency.

It refers to the ISM and SRD Sub-G (Industrial, Scientific and Medical and Short-Range Devices frequency bands below 1 GHz) for communicating between the console and its sensors. This frequency is not the same as the 4G modem (LTE) or Wi-Fi working frequencies (2.4 GHz, 5 GHz). ISM/SRD bands are kept separate from 4G frequencies by national regulations to avoid interference. Typical ISM/SRD frequencies are 915MHz(Americas), 868MHz(Europe), 433MHz(worldwide), 920MHz (Japan, Korea).

2.Similar sensors

Model	WN30	WN31	WN32	WN32S	WN32P
Finish					
Multi-Channel Temperature	✓	✓			
Multi-Channel Humidity		✓			
Indoor Temperature & Humidity					✓
Outdoor Temperature & Humidity			✓	✓	
Barometer					✓
Feels Like Temperature on APP			✓	✓	
Apparent Temperature on APP			✓	✓	
Dew Point on APP			✓	✓	

Protection Rating	IP44	IP44	IP44	IP44	IP44
Sensor ID Name	Multi-Channel T&H	Multi-Channel T&H	T&H	T&H	T&HP
Whether sensor data can be hosted on weather underground			✓	✓	✓

Table 1

Note:

1. WN32/WN32 (SHT35 probe) sensor worked as dedicated data for "Outdoor Temperature and Humidity".
2. The WN31/WN31 (with SHT35 probe) sensor works as "Multi-channel Temperature and.

3.Pairing with a receiver

If you want to view the multi-channel sensor data on your mobile application, you need to pair this device with our Wi-Fi Gateway (sold separately).

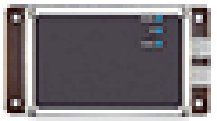
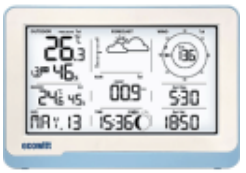
3.1 Pair with Gateway

If the gateway has been in operation, and you have never had any WN31 (with SHT35 probe) multi-channel temperature and humidity sensor(s) setup before, just power up the sensor(s) and gateway will pick multi-channel temperature and humidity data automatically.

If a WN31 (with SHT35 probe) sensor has been hooked on gateway before, and you have a new WN31 (with SHT35 probe) sensor to replace the old one, unplug gateway from USB socket and power up again, then the new sensor will be learned and old sensor will be erased.

3.2 Compatible Gateways/Consoles

Gateway /Console Model Name	Maximum number per Console	Picture	Whether the data could Upload to Internet	Whether the data Could Display on the Gateway/ Console
GW1XXX	8		√	×
GW2000	8		√	×
GW3000	8		√	×
WS6210	8		√	×

WS6006	1		√	×
HP25XX	8		√	√
HP3500	8		√	√
WS38XX	8			
WS39XX	8			
WN1980	8			

WN182X	8			
WN19XX	8			
WN1920	8			
WS2910	8			

Table 1

4.Instructions for Use

4.1 Parts List

1 x Multi-channel Temperature and Humidity sensor

1 x User Manual

2 x SUS304 Screws ST D5.8*M3*15 Stainless Steel PA

1 x Plastic Zip Tie

4.2 Views and Sizes

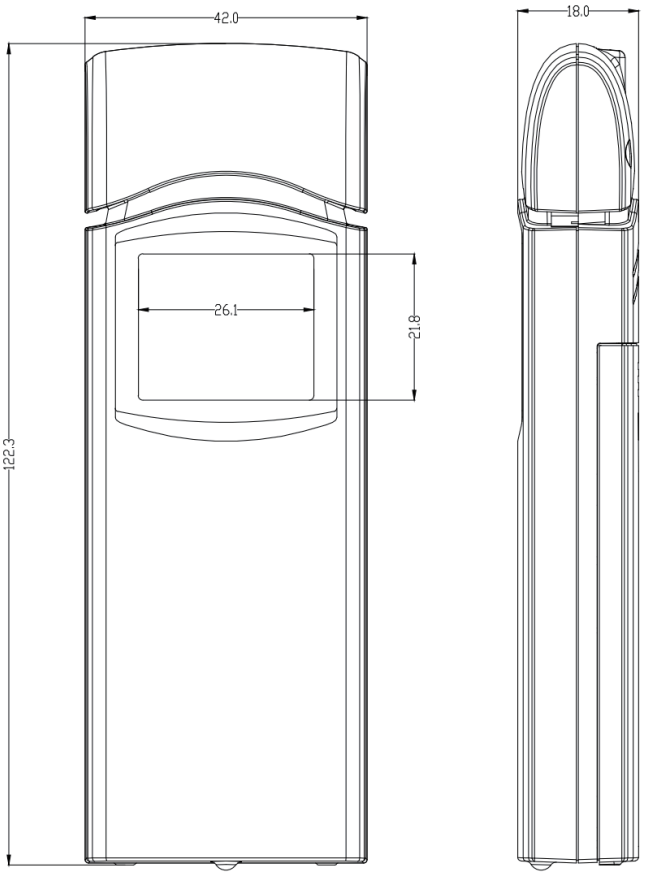


Figure 2

4.3 Overview

Figure 3 WN31

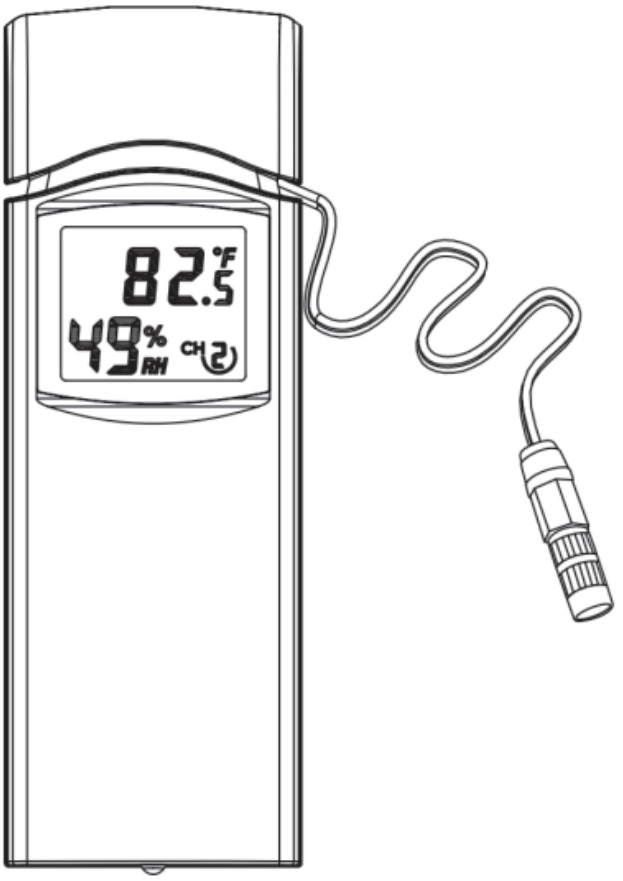


Figure 4 WN31 (with SHT35 probe version)

4.4 Display

4.4.1 Initial 4 displays after power up

Check startup screen and remember your sensor ID number.

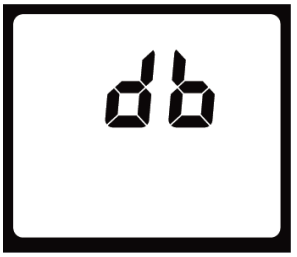
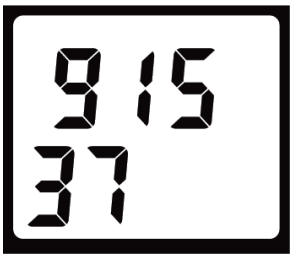
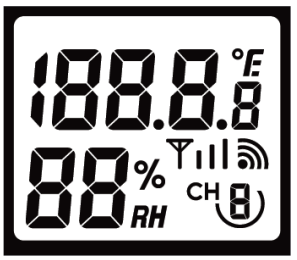
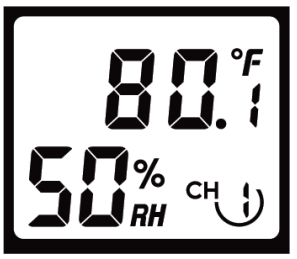
	Sensor ID number
	915—RF frequency 37—Company Internal Code
	Full Display
	Normal Display

Table 2

4.4.2 Normal display layout

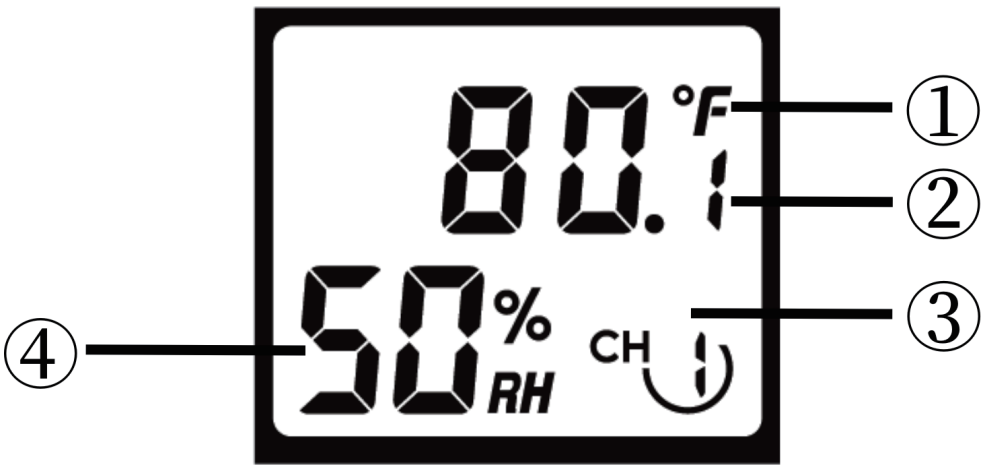


Figure 5 Normal LCD display

(1) Temperature units (°F vs. °C)

(2) Temperature

(3) Channel number

(4) Relative humidity

5.Setup Guide

5.1 Power up and Temperature Units/Channel Number setting

1.Remove the battery door on the back of the transmitter(s) by sliding down the battery door, as shown in **Figure 6**.

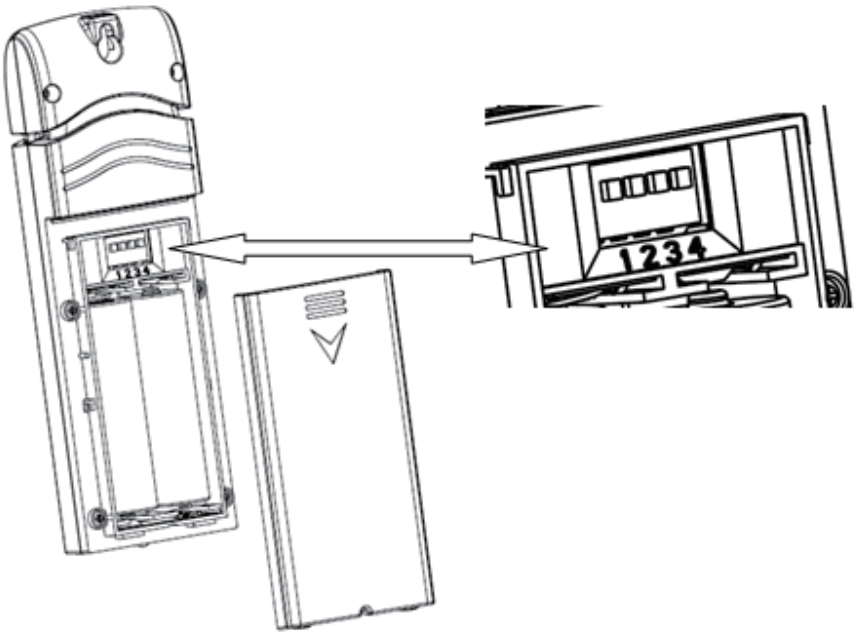


Figure 6 Battery installation

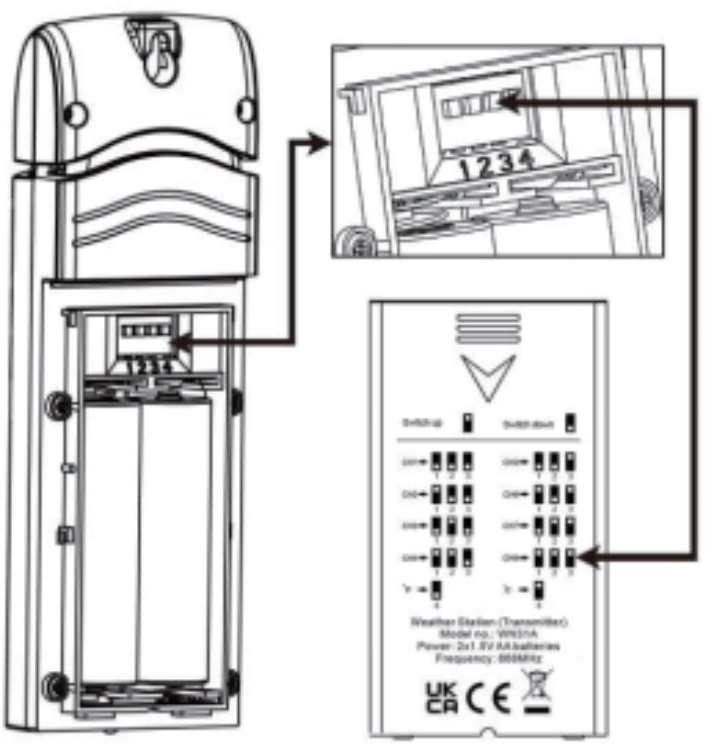
2.Before inserting the batteries, find the dip switches above the battery compartment and set the temperature units and channel number:

Temperature Units:

To change the transmitter display units of temperature measure (°F vs. °C), change Dip Switch 4, as referenced in **Figure 7.**

Channel Number:

This device supports up to eight sensors. To set each channel number, change Dip Switches 1, 2 and 3, as referenced in **Figure 7**.



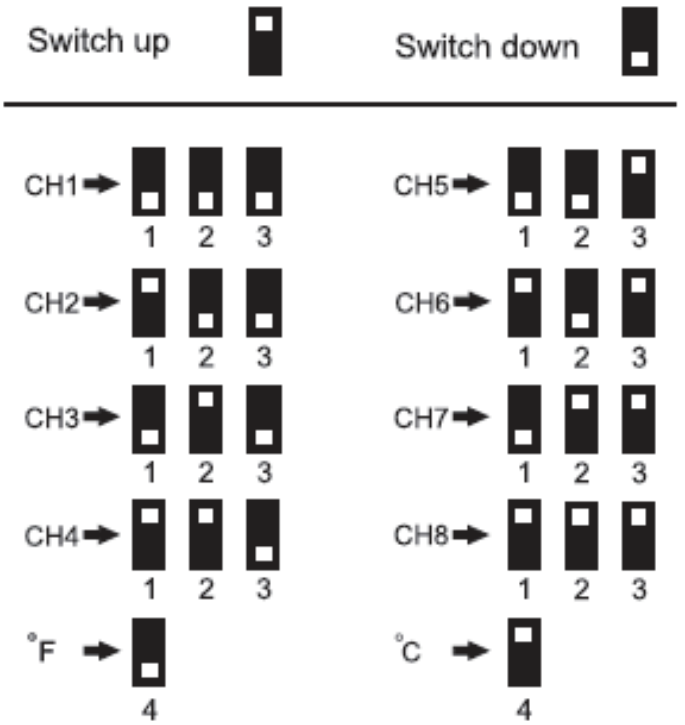


Figure 7 Dip Switch diagram

3.Insert two AA batteries.

4. Verify the correct channel number (CH) and temperature units of measure (°F vs. °C) are on the display.

5. Close the battery door.
   Repeat for the additional remote transmitters (sold separately), verifying each remote is on a different channel.

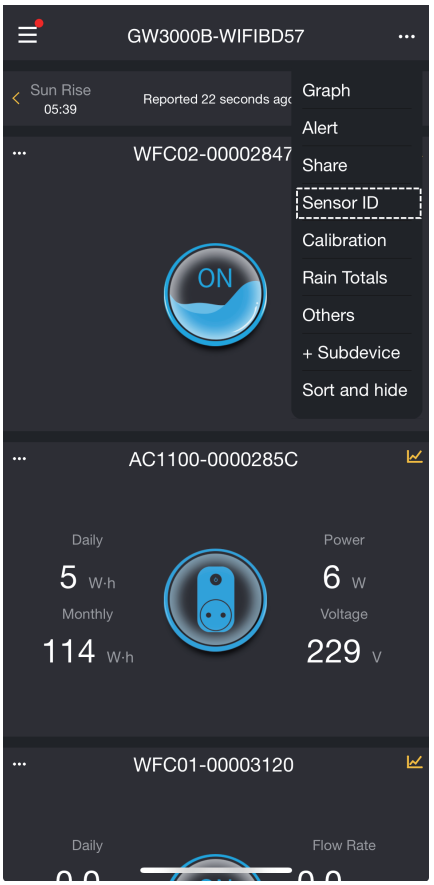
5.2 Setting or adding a sensor on APP

1. If there is no existing WN31 sensor in your system, the gateway will automatically receive its data.

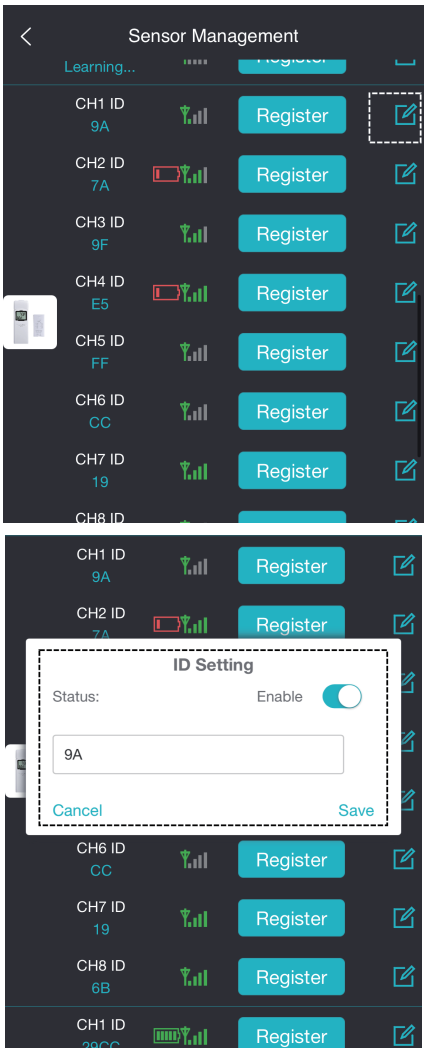
- Please wait patiently for about one minute; the data should appear on the app dashboard.
- If no data appears, follow the steps below to manually add the sensor.

2. To add additional WN31 sensors, follow the same procedure.

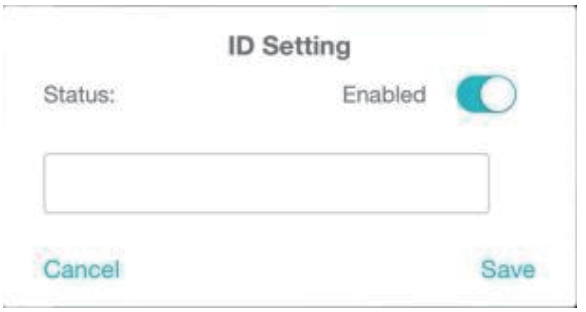
- Please ensure that each WN31 uses a different channel number (CH), as explained in **Section 5.1.** The device supports CH1 to CH8.



Ensure your phone and gateway link the WiFi hot spot in the same router, touching “…” to go sensor ID page



Touching “ ” to open ID setting page



3. Enter the Sensor ID number from startup screen on WN31

6.View Online Data on Ecowitt APP

When the Wi-Fi configuration is done, you can view the local data of your multi temperature and humidity sensor(s) on the Ecowitt app application.

- Edit panel and title by “…” .
- Tap “  ” to get graph of history data.

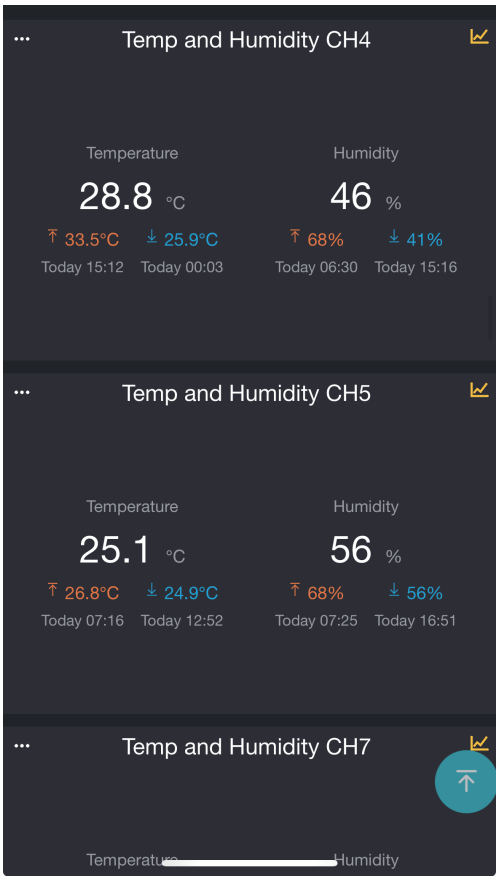


Figure 8

7.Sensor Mounting

7.1 Mounting Location

The best mounting location for the indoor sensor is in a location that never receives direct sunlight, not even through windows. Also, do not install in a location where a nearby radiant heat source (radiator, heaters, etc.) will affect it. Direct sunlight and radiant heat sources will result in inaccurate temperature readings.

The unit is not weatherproof, you should mount the unit under cover (eve or awning or similar). If outdoor mounting is needed, please use an outdoor accessory mounting shield from us:

Figure 9

7.2 Final Mount

To mount or hang the unit on a wall or wood beam:
Use a screw or nail to affix the remote sensor to the wall, as shown on the left side of figure 10.
Hang the remote sensor using a string, as shown in right side of figure 10.

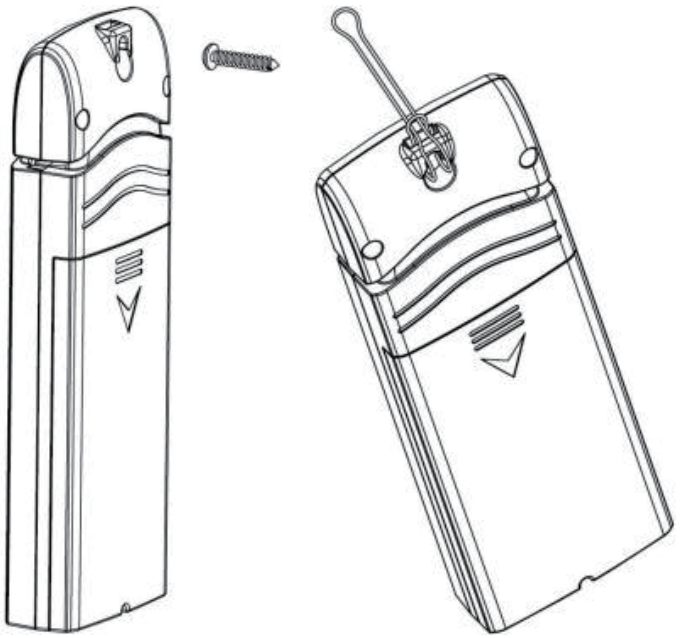


Figure 10 Sensor mounting

Note: Make sure the sensor is mounted vertically and not lying down on a flat surface. This will insure optimum reception. Wireless signals are impacted by distance, interference (other weather stations, wireless phones, wireless routers, TVs and computer monitors), and transmission barriers, such as walls. In general, wireless signals will not penetrate solid metal and earth (down a hill, for example).

Note: If you want to install the sensor outside, it's recommended to install it inside a solar radiation shield to obtain best accuracy and protection.

8.Sensor Calibration

If you have a reliable source to calibrate the temperature and humidity data, you may calibrate the offset on the Ecowitt App, or the console.

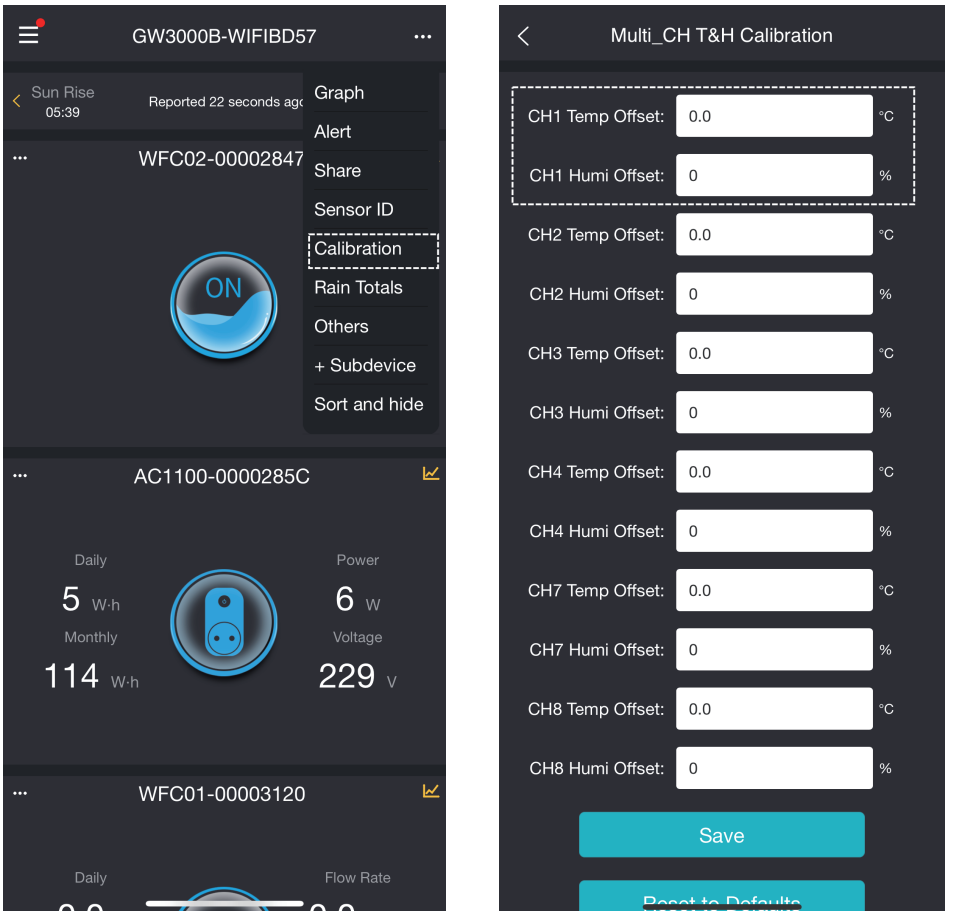


Figure 11

Open ecowitt APP → "…" → "Calibration" → "CHX Temp Offset"→ "CHX Humi Offset"→ "Save".

9.Specification

Model	WN31/WN31(with SHT35 probe)
Name	Wireless Multi-channel Thermometer and Hygrometer Sensor
Dimensions	122×42×18 (mm)
Screen Size	22×26 (mm)
Weight	45g Probe version: 77g
Frequency	915/868/433MHz depending on location (North American: 915MHz; Europe: 868MHz; Other areas: 433MHz)
Temperature range	-40°C — 60°C; (-40°F — 140°F)
Temperature resolution	0.1°C, or 0.2°F

Temperature accuracy	± 1 °C(0.2 °F) ; Probe version: ±0.2℃ (0.4°F)
Humidity range	1% ~ 99%
Humidity resolution	1%
Humidity accuracy	± 5%; ±1.8% (Probe version)
Power	2 AA batteries (not included)
Data reporting intervals	about 60 seconds

Table 3

Note: A low battery icon will display on the APP to indicate the battery status of the sensor(s).

10.Warranty

We disclaim any responsibility for any technical error or 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 only to the original purchaser of this product. To receive warranty service, the purchaser must contact us for problem determination and service procedures.

This limited 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, or claims based on misrepresentation by the seller, or performance variations resulting from installation-related circumstances.

11.FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference (1) this device may 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.

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 RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.
IC Caution:
English:

This device contains licence-exempt transmitter(s) /receiver(s) that comply with Innovation, Science and Economic Development Canada’s licence-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 undesired operation of the device.

12.Battery Care and Maintenance

When batteries of different brand or type are used together, or new and old batteries are used together, some batteries may be over-discharged due to a difference of voltage or capacity. This can result in venting, leakage, and rupture and may cause personal injury.

- Do not mix Alkaline, Lithium, standard, or rechargeable batteries.
- Always purchase the correct size and grade of battery most suitable for the intended use.
- Always replace the whole set of batteries at one time, taking care not to mix old and new ones, or batteries of different types.
- Clean the battery contacts and also those of the device prior to battery installation.
- Ensure the batteries are installed correctly with regard to polarity (+ and -).
- Remove batteries from product during periods of non-use. Battery leakage can cause corrosion and damage to this product.
- Remove used batteries promptly.

- For recycling and disposal of batteries, and to protect the environment, please check the internet or your local phone directory for local recycling centers and/or follow local government regulations

13.Contact Us

13.1 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.

13.2 Stay in Touch

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