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› [ECOWITT](#) /

› [ECOWITT GW3001 Weather Station User Manual: GW3000 Gateway & WS90 Sensor Array](#)

ECOWITT GW3001

ECOWITT GW3001 Weather Station User Manual

GW3000 Wi-Fi & Ethernet Gateway and WS90 Outdoor Sensor Array

1. INTRODUCTION

This manual provides detailed instructions for the setup, operation, and maintenance of your ECOWITT GW3001 Weather Station. The system comprises the GW3000 Wi-Fi & Ethernet Gateway and the WS90 Outdoor Sensor Array, designed to provide accurate indoor and outdoor weather data.



Figure 1.1: ECOWITT GW3001 Weather Station, showing the GW3000 Gateway and WS90 Sensor Array.

2. WHAT'S IN THE BOX

Upon unpacking your ECOWITT GW3001 Weather Station, please verify that all components are present:

- ECOWITT GW3000 Wi-Fi & Ethernet Gateway
- ECOWITT WS90 Outdoor Sensor Array
- Instruction Manual (this document)

Batteries for the outdoor sensor are not included and must be purchased separately.

3. PRODUCT OVERVIEW

3.1 GW3000 Wi-Fi & Ethernet Gateway

The GW3000 Gateway serves as the central hub for collecting data from the WS90 sensor array and other compatible ECOWITT sensors. It features built-in indoor temperature, humidity, and barometric pressure sensors. It supports both Wi-Fi and Ethernet connectivity for internet access and data upload.



Figure 3.1: GW3000 Gateway with labeled components including Ethernet Port, Type-C Port, SD Card Port, Reset Button, Antennae, and status lights (WiFi, SD Card, RF).

Key features of the GW3000 Gateway:

- **Connectivity:** Wi-Fi and Ethernet (cable not included).
- **Internal Sensors:** Indoor temperature, humidity, and barometric pressure.
- **SD Card Port:** Supports FAT32 SD cards up to 32GB (SD card not included) for data logging.
- **IoT Compatibility:** Can pair with ECOWITT IoT devices like the WFC01 smart watering timer and AC1100 smart outlet switch (sold separately).

3.2 WS90 Outdoor Sensor Array

The WS90 is a compact, integrated 7-in-1 outdoor weather sensor designed to collect accurate data for temperature, humidity, wind direction, wind speed, UV light, and piezo rainfall. It is built to withstand outdoor conditions with an IPX5 waterproof standard and features a built-in solar panel for power.

All-in-1 Integrated Weather Sensors

Collect temperature, humidity, wind direction and speed, light and UV levels



Figure 3.2: WS90 Sensor Array with labeled components including AA LR6 Battery Compartment, Haptic Rainfall Sensor, Light & UV Sensor LED Indicator, Solar Panel, USB port for firmware update, Ultrasonic Wind Speed Sensor, Temperature & Humidity Sensor Inside, Directional Symbol, Fixed Bolt for mounting, and Reset button.

Key features of the WS90 Sensor Array:

- **Measurements:** Temperature, humidity, wind direction, wind speed, UV light, piezo rainfall.
- **Power:** Built-in solar panel; also supports batteries (not included).
- **Durability:** IPX5 waterproof standard.
- **Transmission Range:** Up to 300m (1,000ft) in open space; up to 150m (500ft) with obstacles.
- **RF Frequency:** 915 MHz.



New Construction

Figure 3.3: Detail of the WS90 haptic rain gauge, highlighting the new construction with an added slope to prevent water accumulation and improve rainfall measurement accuracy.

4. SETUP

4.1 Initial Power-Up and Placement

1. **WS90 Sensor Array:** Install batteries (not included) into the AA LR6 Battery Compartment. Mount the WS90 in an open area, ensuring the solar panel receives adequate sunlight and the wind sensors are unobstructed. The fixed bolt allows mounting on a pole with a 1-inch diameter. Ensure the directional symbol is correctly oriented towards North.
2. **GW3000 Gateway:** Connect the GW3000 Gateway to a power source using the provided Type-C port. The gateway can be placed indoors.

4.2 Network Configuration

The GW3000 Gateway supports both Wi-Fi and Ethernet connectivity. For initial setup and configuration, the ECOWITT APP is required.

1. **Download the ECOWITT APP:** Search for "Ecowitt" in your smartphone's app store and install the application.

2. **Connect to Gateway:** Follow the in-app instructions to connect your smartphone to the GW3000 Gateway. This typically involves connecting to a temporary Wi-Fi network broadcast by the gateway or connecting the gateway to your router via an Ethernet cable.
3. **Configure Wi-Fi/Ethernet:** Within the app, select your home Wi-Fi network and enter the password, or confirm the Ethernet connection.
4. **Sensor Pairing:** The GW3000 will automatically detect and pair with the WS90 Outdoor Sensor Array once both are powered on and within range. You can manage sensor selection and calibration settings through the app.

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Explore the Environment around You



View and Share the Data Whenever and Wherever



Figure 4.1: System diagram illustrating the connection flow from the WS90 sensor to the GW3000 Gateway, router, Ecowitt Cloud system, and the Ecowitt App, including optional IoT device integration.

5. OPERATING THE WEATHER STATION

5.1 Viewing Live Data

Once configured, live weather data from your WS90 sensor array and the GW3000's internal sensors can be viewed through the following platforms:

- **Ecowitt APP:** Provides real-time data, historical graphs, and allows management of sensor settings.
- **WS View Plus APP:** Another application for viewing collected live data.

5.2 Uploading Data to Online Platforms

The GW3000 Gateway supports uploading all sensor data to various online weather services, allowing you to share your local weather information and access it remotely.

- Wunderground
- Weathercloud
- WoW (Weather Observations Website)
- Ecowitt Weather
- Custom sites (e.g., Homeseer or Homeassistant)

Configuration for these platforms is typically done through the Ecowitt APP or the gateway's web interface.



Figure 5.1: Examples of WS90 sensor placement in various environments (Farm, Garden, Driveway) and a mobile phone displaying weather data from the Ecowitt App.

6. MAINTENANCE

The ECOWITT GW3001 Weather Station is designed for low maintenance. However, periodic checks ensure optimal performance.

- **WS90 Battery Check:** While the WS90 features a solar panel, it also uses batteries for backup power, especially during prolonged periods of low light. Check and replace batteries as needed.
- **Sensor Cleaning:** Periodically inspect the WS90 sensor array for any debris (leaves, dirt, insects) that might obstruct the wind sensors, rain gauge, or solar panel. Gently clean as necessary.
- **Firmware Updates:** Check the ECOWITT APP or website for available firmware updates for both the GW3000 Gateway and WS90 Sensor Array to ensure you have the latest features and improvements. The WS90 has a USB port for firmware updates.
- **Waterproofing:** The WS90 is IPX5 waterproof. Ensure all covers and seals are properly secured after any maintenance involving opening the unit.

7. TROUBLESHOOTING

This section addresses common issues you might encounter with your weather station.

- **No Data Displayed:**
 - Ensure both the GW3000 Gateway and WS90 Sensor Array are powered on.
 - Verify the GW3000 is connected to your network (check WiFi/Ethernet status lights).
 - Check the distance between the WS90 and GW3000. The maximum transmission range is 300m (1,000ft) in open space, reduced to 150m (500ft) with obstacles.
 - Confirm the WS90 batteries are functional.
- **Inaccurate Readings:**
 - **Rainfall:** Ensure the haptic rain gauge is clear of debris. The WS90 features a sloped design to minimize water accumulation, but blockages can still occur.
 - **Wind:** Verify the wind sensors are unobstructed.
 - **Temperature/Humidity:** Ensure the sensors are not exposed to direct heat sources or excessive moisture beyond normal weather conditions.

- **Calibration:** Use the Ecowitt APP to perform sensor calibration if readings consistently appear incorrect compared to local official data.

- **Network Connectivity Issues:**

- If using Wi-Fi, ensure the GW3000 is within range of your router.
- If using Ethernet, check the cable connection.
- Try restarting your router and the GW3000 Gateway.

- **Resetting Devices:**

- **GW3000 Gateway:** A small reset button is located on the back of the unit. Use a paperclip to press and hold for a few seconds to perform a factory reset.
- **WS90 Sensor Array:** A reset button is available on the sensor array. Press to reset the device.

8. SPECIFICATIONS

Detailed technical specifications for the ECOWITT GW3001 Weather Station:

Feature	Specification
Model Number	GW3001CA
Brand	ECOWITT
Package Dimensions	8.82 x 6.22 x 4.69 inches; 2.18 Pounds
Recommended Uses	Garden, Home
Specific Uses	Humidity, Rain Rate, Temperature, UV Index, Wind Direction and Speed
Power Source	Gateway: Corded Powered; Outdoor Sensor: Solar Powered Or Batteries Powered (Batteries Not Included)
Special Feature	IoT Function
Material	Plastic
Connectivity Technology	Wi-Fi
RF Frequency	915 MHz

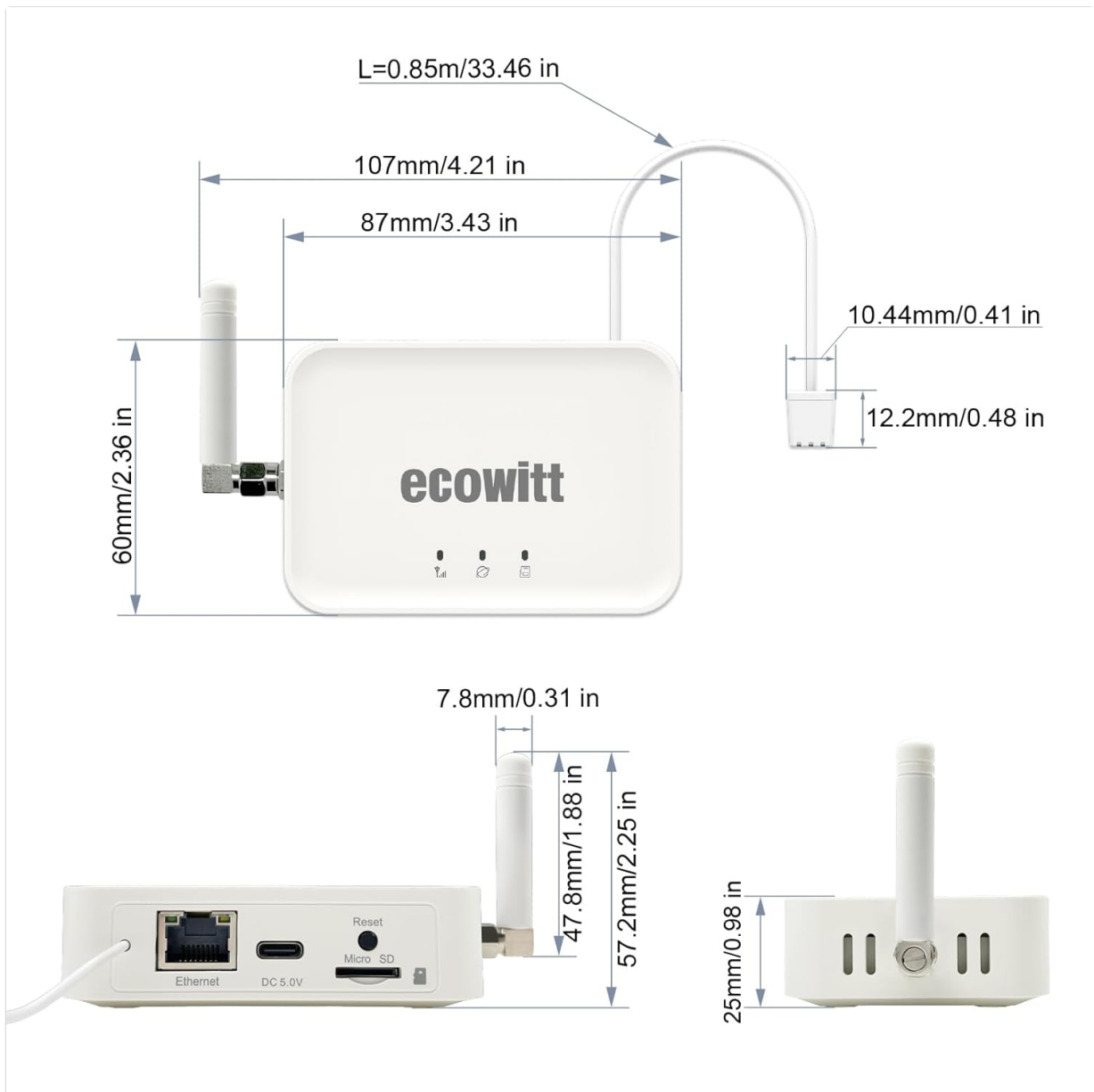


Figure 8.1: Dimensions of the GW3000 Gateway in millimeters and inches.



Figure 8.2: Dimensions of the WS90 Outdoor Sensor Array in centimeters and inches.

9. WARRANTY INFORMATION

Specific warranty details for the ECOWITT GW3001 Weather Station are not provided in this manual. Please refer to the product packaging, the official ECOWITT website, or contact the seller directly for comprehensive warranty information and terms.

10. SUPPORT

For further assistance, technical support, or to explore additional ECOWITT products and accessories, please utilize the following resources:

- **ECOWITT APP:** Access support features, FAQs, and contact options directly through the application.
- **Official ECOWITT Website:** Visit the official ECOWITT website for product documentation, software downloads, and customer service contact information.
- **Seller Support:** Contact the seller from whom you purchased the product for direct assistance.

11. OFFICIAL PRODUCT VIDEOS

No official product videos from the seller were found in the provided product information to embed in this manual.

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