ambient weather®

RAIN BUDDY
WI-FI RAIN GAUGE

Model WS-1700



USER MANUAL

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WS-1700 RAIN BUDDY QUICK SETUP GUIDE





THE PACKAGE CONTAINS:

- WS-1700 Rain Buddy Wi-Fi Display Console
- Rain Funnel Sensor
- DC to USB Cable
- Quick Setup Guide

WHAT YOU WILL NEED:

- 2× AA batteries, or a user-supplied 5V/1A USB power adapter

Step 1: Power up the console via 2 AA batteries or the included USB cable and a 5V/1A adapter. Mount the console upright on a vertical surface rather than laying it flat.

Step 2: Power up your rain sensor and place it near the console. The console will automatically search for and register the sensor within about 3 minutes.

Step 3: Download the free Ambient Weather app, create an account, add your WS-1700 Rain Buddy, and follow the in-app instructions to connect it to your Wi-Fi network.

Step 4: Register your console on AmbientWeather.net to view and store your data online.

NOTE: *We recommend completing setup indoors, close to your router, before moving the console and sensor to their permanent locations.*

INTRODUCTION

Thank you for your purchase of the Ambient Weather WS-1700 Rain Buddy Wi-Fi Rain Gauge Receiver. The following user guide provides step-by-step instructions for installation, operation, and troubleshooting.

The WS-1700 Rain Buddy is a Wi-Fi weather data receiver equipped with an LCD display and a built-in temperature, humidity, and barometric pressure sensor. It is designed to support two primary modes of operation:

- **Rainfall Display Console** – When paired with a compatible rain sensor (e.g., Rain Buddy Funnel Sensor, WH40/WS-5000 Rain Funnel Sensor, WS-1965, WS85, or WS-4000), the WS-1700 Rain Buddy operates as a dedicated rainfall data display console. It shows real-time rainfall data, including traditional tipping-bucket and piezoelectric rainfall measurements, along with temperature and humidity readings.
- **Wireless Sensor Gateway** – The WS-1700 Rain Buddy can also serve as a gateway to receive data from multiple compatible sensors. Through its built-in Wi-Fi and web interface, you can view sensor data, configure server upload settings, calibrate sensor values, and manage sensor IDs. Paired with the Ambient Weather app, you can access and control all available features from your phone.

This device is not intended to be a standalone product and should be used with compatible outdoor sensors. Without a paired sensor, it will only display time, date, and indoor temperature/humidity.

To ensure the best product performance, please read this manual and retain it for future reference. The product is continuously changing and improving, particularly online services and associated applications. To download the latest manual and additional help, please visit:

https://ambientweather.com/ws-1700-rain-buddy

General Terms Used in This Manual

Weather Station: Consists of the console and sensor(s).

Receiver: Refers to the console.

Transmitter: Refers to the sensor or sensor array.

RF: Radio frequency. Refers to the ISM/SRD sub-1GHz band used for communication between the sensors and the console. This is separate from the Wi-Fi frequency (2.4GHz) used to connect the console to your network. Typical ISM/SRD frequencies are 915MHz (North America), 868MHz (Europe), 433MHz (worldwide), and 920MHz (Japan, Korea).

WARNINGS AND CAUTIONS

WARNING: *Ensure batteries are installed with correct polarity (±) and use only new batteries. Incorrect installation can permanently damage the console or sensor.*

WARNING: *This product is not a toy. Keep out of the reach of children.*

WARNING: *This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body. Use only the supplied antenna.*

WARNING: *Do not expose the console to direct water, excessive moisture, or temperatures outside its rated operating range.*

QUICK START GUIDE

Although this manual is comprehensive, much of the information it contains may be intuitive. The following Quick Start Guide provides only the steps necessary to install and operate the WS-1700 Rain Buddy, along with references to the relevant sections.

STEP	DESCRIPTION	SECTION
1	Power up the console via DC power or batteries	Powering the Console
2	Power up and pair your rain sensor with the console	Connect the Rain Gauge (No Wi-Fi Required)
3	Download the Ambient Weather app and connect the console to Wi-Fi	Wi-Fi Setup via Web Interface
4	Register the console on AmbientWeather.net	Wi-Fi Setup via Web Interface
5	Add any additional optional sensors	Adding Sensors
6	Calibrate sensor readings, if needed	Calibration

Table 1: Quick Start Steps

UNPACKING

Package Contents

QTY	ITEM
1	WS-1700 Rain Buddy Wi-Fi Display Console
1	Rain Funnel Sensor
1	User Manual
1	DC to USB Cable (power adapter not included – user-provided)
1	Quick Setup Guide

Table 2: Package Contents





Views & Dimensions

WS-1700 Rain Buddy: display console and rain funnel sensor

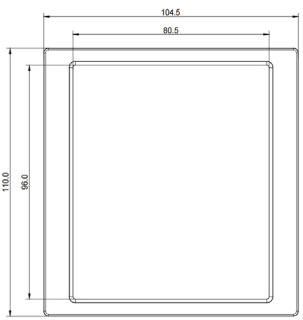


Figure 2: Console dimensions (mm)

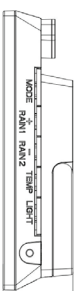


Figure 3: Console side view and buttons

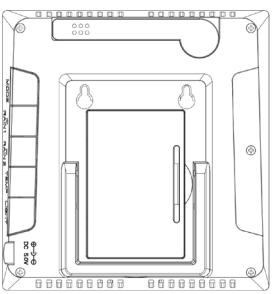


Figure 4: Console rear view

SETUP GUIDE

Powering the Console

VIA DC POWER

Plug a 5V/1A power adapter (not included) into a wall outlet, connect the USB cable, and plug it into the power socket on the back of the console. The console will power on and automatically enter pairing mode.

> **NOTE:** *When powered by DC input, all features are enabled, including Wi-Fi connectivity, sensor data reception, and server upload.*

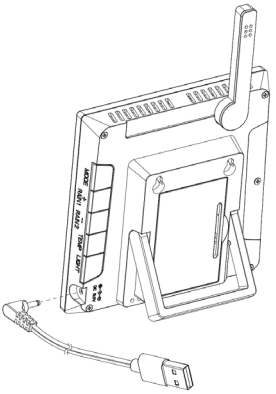


Figure 5: DC power connection

VIA BATTERIES (NOT INCLUDED)

Insert 2 fresh AA batteries into the battery compartment to power on the console.

> **NOTE:** *Battery power provides local display functionality only, for about 20 days. Wi-Fi, other sensor-receiving functions, and cloud upload are disabled while on battery power – only rainfall and indoor/outdoor temperature & humidity are displayed.*

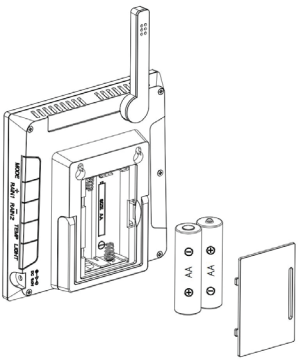


Figure 6: Battery installation

VOLTAGE MONITORING

- When using DC power only (no batteries inserted), the console may still display a low-battery icon. This is normal and can be safely ignored when DC power is connected.
- If the battery voltage is at or below 2.5V, the low-battery icon will appear. Once voltage recovers above 2.6V, the icon will disappear.

During power-up, the software version number and RF frequency are displayed for 1 second, followed by a full-screen layout for 3 seconds, before the console enters Normal Mode. Mount the console upright on a vertical surface for best RF reception – do not lay it flat.



Figure 7: Software version and frequency display

Viewing Data

RAINFALL DISPLAY

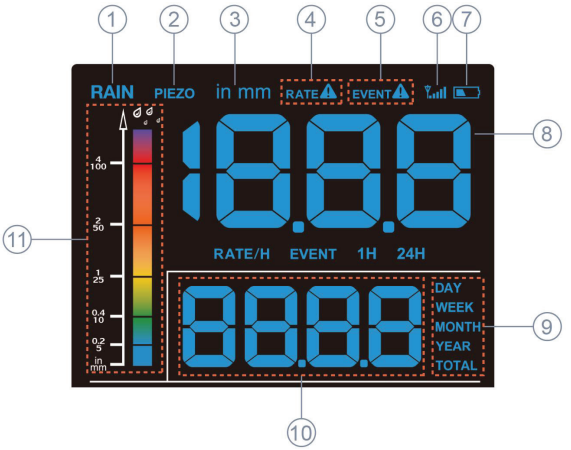


Figure 8: Rainfall display layout

#	ITEM	#	ITEM
1	Rain display	7	Battery bar
2	PIEZO icon*	8	Value for the selected observation (rate, event, 1h, 24h)
3	Rainfall unit	9	History data time frame (day, week, month, etc.)
4	Rain rate alert	10	Value for selected time frame
5	Rain event alert	11	Rainfall bar graph*
6	Signal bar		

Table 3: Rainfall Display Legend

***PIEZO Icon:** If a piezoelectric rain gauge is selected, the PIEZO icon is displayed on screen. If a traditional tipping-bucket rain gauge is selected, no PIEZO icon is shown.

***Rainfall Bar Graph:** The rainfall bar graph corresponds to the selected rain display (rate or event) and shows 6 levels based on rainfall amount:

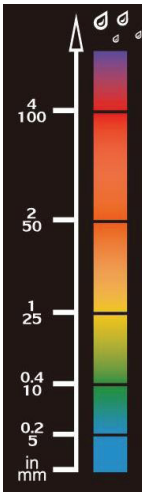


Figure 9: Rainfall bar graph scale

LEVEL	METRIC (MM)	IMPERIAL (IN)
Level 6	> 100 mm	> 4 in
Level 5	50.1–100 mm	2.01–4 in
Level 4	25.1–50 mm	1.01–2 in
Level 3	10.1–25 mm	0.41–1 in
Level 2	5.1–10 mm	0.21–0.4 in
Level 1	0.1–5 mm	0.01–0.2 in
Level 0	0 mm (nothing shown)	0 in

Table 4: Rainfall Bar Graph Levels

INDOOR/OUTDOOR TEMPERATURE DISPLAY

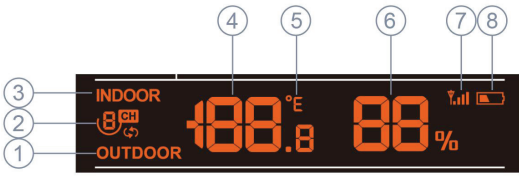


Figure 10: Temperature and humidity display legend

#	ITEM	#	ITEM
1	Outdoor temperature	5	Unit (°C/°F)
2	Channel number (for optional multi-channel sensors)	6	Corresponding humidity value
3	Indoor temperature	7	Signal quality bars
4	Temperature value	8	Battery bars

Table 5: Temperature Display Legend

TIME & DATE DISPLAY

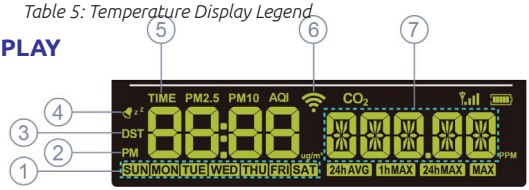


Figure 11: Time and date display legend

#	ITEM	#	ITEM
1	Weekday	5	Time mode
2	PM indicator (12h mode)	6	Wi-Fi icon
3	DST indicator	7	Date display
4	Alarm indicator		

Table 6: Time & Date Display Legend

BACKLIGHT FUNCTION

Backlight levels: 4 (Max), 3 (High), 2 (Medium), 1 (Low), OFF.

On battery power: the backlight defaults to Level 1 and cannot be adjusted. Pressing any button turns it on; it automatically turns off after 15 seconds of inactivity.

On DC power: the backlight defaults to Level 2. Short-press the LIGHT button to cycle: MAX to High to Medium to Low to OFF.

Button Operations and Operating Modes

There are five operating modes: Normal Mode, Setting Mode, Alarm/Alert Setting Mode, Calibration Mode, and MAC Address Display Mode. The sections below describe the button functions in each mode.

BUTTON OPERATIONS

There is a set of five buttons on the back of the display console: MODE, +/RAIN 1, -/RAIN 2, TEMP, and LIGHT.

BUTTON	DESCRIPTION
MODE	Press to switch between Normal Mode, Alarm/Alert Setting Mode, Calibration Mode, and MAC Address Display Mode. Hold for 2 seconds to enter Setting Mode.
+ / RAIN 1	Press to cycle the rainfall display between RATE, EVENT, 1H, and 24H (Normal Mode); increases a value in Setting Mode. Hold 5+ seconds to clear the displayed Rain Rate, Rain Event, or Rainfall Total.
- / RAIN 2	Press to cycle the rainfall display between DAY, WEEK, MONTH, YEAR, and TOTAL (Normal Mode); decreases a value in Setting Mode. Hold 5+ seconds to clear the displayed Day, Week, Month, Year, or Total rainfall.
TEMP	Short-press to cycle through INDOOR, OUTDOOR, CH1-CH8 (auto-cycles every 3 seconds). Hold 2 seconds on a channel to re-register that sensor; hold 2 seconds during auto-cycle to re-register all 8 channels.
TEMP + RAIN 1	Hold 2 seconds to enter Wi-Fi configuration mode.
LIGHT	On DC power, each short press cycles the backlight: MAX to High to Medium to Low to OFF. Press to return to Normal Mode from any other mode.
MODE + LIGHT	Hold 5 seconds to reset the console to factory defaults and reboot. All settings will be erased.

Table 7: Console Buttons

NORMAL MODE

In Normal Mode, the console displays real-time data. Use the RAIN 1/+ and RAIN 2/- buttons to switch between rainfall displays:

RAIN 1/+ cycles: Rain Rate (/H), Rain Event, Rainfall Total for 1 Hour, Rainfall Total for 24 Hours. Hold 5+ seconds to clear the displayed data.

RAIN 2/- cycles: Rainfall for the Day, Week, Month, Year, and

Total Rainfall. Hold 5+ seconds to clear the displayed data.

SETTING MODE

> **NOTE:** *Most of the settings below, plus calibration, can also be changed in the console's web interface. Network settings are web-interface only.*

While in Normal Mode, hold MODE for 2 seconds to enter Setting Mode. The first setting will flash; press MODE again to skip to the next setting. Available settings:

- Beep On/Off
- 12/24-Hour Format
- Manual Time Setting (Hours/Minutes)
- Date Setting (Year/Month/Day)
- Temperature Unit (°C/°F)
- Rainfall Unit (in/mm)
- Rain Sensor Priority (Traditional/Piezoelectric)

Use RAIN 1/+ or RAIN 2/- to change values; hold for 2 seconds to accelerate. The console reverts to Normal Mode after 30 seconds of inactivity, or by pressing LIGHT.

ALARM/ALERT SETTING MODE

The factory default rain rate alarm is 1.0 mm/h and the rain event alarm is 1.0 mm; both are disabled by default.

In Normal Mode, short-press MODE once until the display shows ALM, then hold MODE for 2+ seconds to enter Alarm/Alert Setting Mode. Press MODE to cycle through: Alarm Hour, Alarm Minute, Rain Rate Alert Threshold, and Rain Event Alert Threshold. While setting the Alarm Hour or Minute, press TEMP to toggle the alarm ON/OFF. Use RAIN 1/+ or RAIN 2/- to change values.

If triggered, the buzzer sounds for 2 minutes (getting progressively faster) unless a button is pressed. Pressing any button stops the buzzer, but the alarm icon continues to flash until the condition clears.

CALIBRATION MODE

In Normal Mode, short-press MODE twice until the display shows CAL, then hold MODE for 2+ seconds to enter Calibration Mode. Press MODE to cycle through the available calibration items.

Rain Gain Calibration

Applies to rain data from Rain Buddy Funnel Sensor, WH40/ WS-5000 Rain Funnel Sensor, and WS65/WS-1965 rain gauges. The rain collector is factory-calibrated to the funnel diameter; each model has a different tipping resolution:

WH40/WS-5000 Rain Funnel Sensor: one bucket tip = 0.1 mm (0.004 in) of rainfall.

WS65/WS-1965: one bucket tip = 0.254 mm (0.01 in) of rainfall.

Rain Buddy Funnel Sensor: one bucket tip = 0.3 mm of rainfall.

To verify accuracy, compare accumulated rainfall with a manual sight-glass rain gauge with an aperture of at least 4 inches (0.1 m). For reference, 1 mm of rainfall equals 1 liter of water spread over 1 square meter. Clean the rain gauge funnel periodically.

> **NOTE:** *Calibration fine-tunes or corrects for sensor error – electronic variation, mechanical wear, or contamination. It is only useful if you have a known, calibrated reference to compare against, and is optional. Do not compare your readings against sources such as the internet, radio, TV, or newspapers – your station measures your own micro-climate, which can vary significantly from location to location.*

Piezo Rain Gain Calibration

Includes calibration of Piezo Daily, Weekly, Monthly, Yearly, and Total Rain, plus Piezo Rain Gain 1 through 5. This fine-tunes a connected piezoelectric rain sensor by applying different gain coefficients based on rainfall intensity (calibration range: 0.10 to 5.00):

- Piezo Rain 1 Gain – applied when rainfall intensity is under 4 mm/h
- Piezo Rain 2 Gain – applied when rainfall intensity is under 10 mm/h
- Piezo Rain 3 Gain – applied when rainfall intensity is under 30 mm/h
- Piezo Rain 4 Gain – applied when rainfall intensity is under 60 mm/h
- Piezo Rain 5 Gain – applied when rainfall intensity is over 60 mm/h

Use RAIN 1/+ and RAIN 2/- to adjust the coefficient; hold for 2 seconds to change more rapidly.

MAC ADDRESS DISPLAY MODE

Press MODE 3 times to enter MAC Address Display Mode; the console's MAC address will appear on screen.

PAIRING WITH SENSORS

Connect the Rain Gauge (No Wi-Fi Required)

NOTE: *This connection does not require Wi-Fi – you can view rain data without a network connection. Make sure the RF frequency of the sensor and console match (frequency varies by country/region). Place the sensor and console close together (about 1 m / 3 ft) to test functionality before installing the sensor in its permanent location. Movement during and after assembly can cause the tipping-bucket mechanism to tilt and falsely register rain; reset the rain total via the console, or remove the sensor's batteries while moving it.*

(1) Power up the rain gauge:
- Rain Buddy Funnel Sensor: insert 2 AAA batteries (not included).
- WS-5000 Rain Funnel Sensor: install the filter and rain-collector top, remove the battery door by sliding it toward the arrow, and insert 1 AA battery (not included).

(2) In learning mode (the default), the console automatically searches for the sensor's data. This may take up to 3 minutes.

(3) If rainfall data does not appear, hold RAIN 1/+ and RAIN 2/- for 5 seconds; the console will re-register the sensor for 3 minutes.

Wi-Fi Setup via Console Web GUI

To send your data to AmbientWeather.net, connect the console to your Wi-Fi network using its built-in graphical user interface (GUI). You will need a Wi-Fi device (phone, tablet, or computer), your Wi-Fi network name (SSID), and your Wi-Fi password.

(1) Hold TEMP + RAIN 1 for 2+ seconds in Normal Mode to enable the console's hotspot (the Wi-Fi icon will flash), then connect your device to the console's Wi-Fi network. Ignore any 'no internet connection' message – that's expected.

NOTE: *The hotspot does not activate while the console is running on battery power alone.*

(2) In a web browser on your connected device, go to 192.168.4.1. Leave the password blank (no password by default) and select Login.

(3) Select Local Network. Enter your Wi-Fi network name (SSID) and password, or select Scan Router to choose your network from a list, then select Apply.

NOTE: *The console connects only on the 2.4 GHz band. If your router is dual-band, make sure you connect to the router's 2.4 GHz band.*

(4) Record the console's MAC address shown on screen.

(5) Register the console on the Ambient Weather Network. Select the Weather Services tab. Under AmbientWeather.net, enter the email address for your AmbientWeather.net account (if you don't have an account yet, you will be walked through creating one for this device), choose how often to upload data (the default is every 1 minute), and save your settings. Check your email and follow the instructions to complete registration. Once registered, sign in to AmbientWeather.net and select the dashboard to view your data.

Once your console is connected to your Wi-Fi network, you should be able to access the console web GUI by navigating to 192.168.4.1 in any browser connected to the same network. You can also always connect directly to the device by following the procedure detailed in "**Wi-Fi Setup via Console Web GUI**."

Device Location, Time Zone, DST, and Data Sharing

After Wi-Fi setup, configure the following in the console web GUI:

- Open **Device Settings**.
- Set the device's location and time zone. Enable Auto DST and Is Public if desired.
- Tap **Save**, then power-cycle the console; it will automatically sync time and DST.

NOTE: *After completing Wi-Fi setup and these settings, the console will show a stable Wi-Fi signal along with the correct time zone and DST.*

Adding Sensors

To pair optional sensors (see **Optional Sensors** for the full list) with the console:

- Power on the sensor and place it near the console.
- Wait 1-2 minutes and check whether the console or app automatically picks up the sensor's data.
- The number of bars behind the RF icon decreases by one if a registered sensor's signal is missed, and increases by one when a signal is received.
- If data isn't received, access the console web GUI.
- Go to **Sensor ID**, and open **Sensor Management**.
- On the **Sensor Management** page, find the sensor and register it using its Sensor ID (usually printed on a sticker on the sensor).
- Once successful, return to the console main screen to confirm the data is showing.

If you know a sensor's exact ID and want the console to pair only that sensor, enter the ID manually and save. When multiple sensors of the same type are present (e.g., a Rain Buddy Funnel Sensor, a WH40, and a WS-1965), the console automatically registers the sensor highest in the priority hierarchy (WS85 > WS-4000 > WH40 > WS-1965 > Rain Buddy Funnel Sensor) unless you specify a particular Sensor ID. This hierarchy applies to wind, rain, outdoor/indoor temperature, and solar data.

Historical Data Export and Clear

EXPORT HISTORY DATA

The WS-1700 Rain Buddy does not support storing data on a memory card. Once Wi-Fi setup is complete, log in to AmbientWeather.net to export data in CSV format.

> **NOTE:** *Daily/24-hour data is retained for 3 months (5-minute resolution). Weekly data is retained for 1 year (30-minute resolution). Monthly data is retained for 2 years (3-hour resolution). Yearly data is retained for 4 years (6-hour resolution).*

CLEAR HISTORY DATA ON AMBIENTWEATHER.NET

Navigate to Menu, then Devices, then the settings icon, and confirm.

Firmware Upgrade

Access the console web GUI and select **Device Settings**. You can manually check for a firmware upgrade or select the check box to automatically upgrade the firmware when a new one is released

Calibration

If you have data from a trusted nearby weather station, you can use it as a reference – keep in mind your microclimate may legitimately differ from public station data.

- Access the console web GUI.
- Tap the settings icon in the top right and choose **Calibration**.
- For a given parameter (e.g., outdoor temperature), calculate the offset versus an accurate reference sensor.
- Enter the offset and tap **Save**.

Sensor Signal Quality Indicator

During synchronization, the signal indicator decreases by one bar each time the console misses a transmission from a sensor, and increases by one bar each time it receives one (maximum 5 bars).

Upload Data to Additional Servers

After Wi-Fi setup, data can be uploaded to any of the following:

- AmbientWeather.net (default)
- Wunderground.com
- Weathercloud.net
- WOW (wow.metoffice.gov.uk)
- A user-chosen custom/DIY server

To manage upload servers: ensure your phone and console are on the same Wi-Fi network, then in the Ambient Weather app tap the settings icon, go to Others, then DIY Upload Servers.

Best Practices for Wireless (RF) Communication

RF communication is susceptible to interference from distance, walls, and metal barriers. For reliable communication between sensor and console:

Sensor placement: mount or hang the sensor vertically for the longest signal reach; avoid laying it flat.

EMI: keep the console several feet from computer monitors and TVs.

RFI: if other devices share the same frequency band and you experience intermittent communication, try powering those devices off, or relocate the sensor/console.

Line of sight: rated at 300 feet under ideal conditions (no obstructions); expect roughly 100 feet through a wall or two in typical real-world use.

Metal barriers: RF will not pass through aluminum siding or metal wall framing – relocate the sensor or console if you experience issues near metal structures.

MEDIUM	RF SIGNAL STRENGTH REDUCTION
Glass (untreated)	5-15%
Plastics	10-15%
Wood	10-40%
Brick	10-40%
Concrete	40-80%
Metal	90-100%

Table 8: RF Signal Strength Reduction by Material

RAINFALL SETTINGS

Rain Sensor Priority

The WS-1700 Rain Buddy supports two types of rain sensors: traditional tipping-bucket sensors (WS-5000 Rain Funnel Sensor, WS-2000/2902, WS-1965, Rain Buddy Funnel Sensor) and piezoelectric sensors (WS-4000). When multiple sensors are connected, each type follows a display priority: for tipping-bucket sensors, WS-5000 Rain Funnel Sensor > WS-2000/2902 = WS-1965 = WS-1965 > Rain Buddy Funnel Sensor

HOW TO SET RAIN SENSOR PRIORITY

In Normal Mode, hold MODE for 2 seconds, then press MODE until Rain Sensor Priority (Traditional/Piezoelectric) appears. Use RAIN 1/+ or RAIN 2/- to change the value.

Clear the Rainfall Value

- Hold RAIN 1/+ for 5+ seconds to clear the current RAIN 1 value.
- Hold RAIN 2/- for 5+ seconds to clear the current RAIN 2 value.

Rain Gauge Sensor Registration

Hold RAIN 1/+ and RAIN 2/- simultaneously for 5+ seconds to re-register all connected rain sensors.

OPTIONAL SENSORS

Sensors

When powered by DC or battery, the console supports the sensors listed below. These are sold separately; visit ambientweather.com for details. Select sensors matching the same RF frequency as your console (frequency varies by country/region).

NOTE: *Max Qty indicates the maximum number of each sensor type the console can connect to. Sensor data can be viewed on AmbientWeather.net (1-minute resolution), in the Ambient Weather app (1-minute resolution), and in the console's built-in web interface (real time).*

SENSOR DATA DISPLAYED ON THE CONSOLE SCREEN

SENSOR MODEL	MAX QTY	FUNCTIONS
Rain Buddy Funnel Sensor	1	Rainfall
WS-4000	1	Outdoor temperature & humidity, rainfall, wind, light, UV (upload only, not displayed on console)
WS-5000	1	Outdoor temperature & humidity, wind speed/direction, light, UV (upload only, not displayed on console)

WS-1965	1	Outdoor temperature & humidity, rainfall, wind, light, UV (upload only, not displayed on console)
WS-5000 Rain Funnel Sensor	1	Rainfall
WH32B	1	Indoor temperature, humidity and pressure
WN31	8	Temperature and humidity
WH31P	8	Temperature
WH31PF	8	Pool temperature

Table 9: Sensors Displayed on the Console

SENSOR DATA UPLOADED TO AMBIENTWEATHER.NET ONLY

SENSOR MODEL	MAX QTY	FUNCTIONS
WH51SM	16	Soil moisture
WH51LW	8	Leaf wetness
WH31L	1	Lightning detection
PM25	4	PM2.5
AQIN Pro*	1	CO2, PM1.0/2.5/4.0/10, temperature and humidity
WH31LA	4	Water leak detection

Table 10: Sensors Uploaded to the Cloud Only

*Data from AQIN Pro may be added to the console's on-screen display in a future firmware update.

FEATURES

Built-in sensors: internal temperature, humidity, and barometric pressure sensor.

Multi-data LCD display: shows traditional/piezoelectric rain gauge data, indoor/outdoor temperature & humidity, and up to 8 channels of outdoor temperature & humidity.

Gateway and IoT functionality: receives data from various sensors and serves as an IoT hub.

Web-based configuration: Wi-Fi setup and advanced configuration via the built-in web interface, including server settings, sensor calibration, and Sensor ID management.

Wi-Fi connectivity: real-time data upload to weather platforms.

Auto time zone and NTP support: automatically syncs time zone and network time via the internet.

Customizable units for temperature and rainfall.

Backlight control: adjustable LCD brightness when powered via DC input.

TROUBLESHOOTING GUIDE

PROBLEM	SOLUTION
No rainfall data displayed	Check and remove debris from the funnel inlet hole. Open the funnel and remove any insects or obstructions from the tipping mechanism.
Temperature reads too high during the day	Indoors, ensure the console is in a shaded area. Outdoors, ensure the sensor is shaded or mounted on a north-facing wall.
Display console contrast is weak	Replace the console's batteries with a fresh set.
Rain gauge accuracy check before calibrating (using WH40/WS-5000 Rain Funnel Sensor as an example)	Collect water in a narrow-neck bottle from the gauge's outlet during a rain event and weigh it (e.g., 353 g equals about 353 mL). Divide by the collector area (250 sq cm): 353 mL / 250 sq cm = 1.412 cm, or about 14.1 mm. Compare this calculated depth to the console reading or a calibrated manual gauge. Residual water in the tipping bucket typically makes the measured rainfall slightly (within 5%) less than actual. If the deviation exceeds 5%, adjust the calibration settings or contact customer service.

Table 12: Troubleshooting

SPECIFICATIONS

ITEM	SPECIFICATION
Model	WS-1700 Rain Buddy
Name	High Precision Wi-Fi Rain Gauge Receiver
Transmission distance (open field)	100 m (328 ft)
Frequency	915/868/433 MHz depending on region (North America: 915MHz; Europe: 868MHz; other regions: 433MHz)
Indoor temperature/humidity measuring interval	60 seconds
Indoor temperature measuring range	-9.9°C to 60°C (14°F to 140°F)
Outdoor temperature displaying range	-40°C to 60°C (-40°F to 140°F)
Indoor temperature accuracy	±1°F / ±0.56°C
Indoor humidity measuring range	1% – 99%
Indoor relative humidity accuracy (at 25°C)	±6% for 30-80% RH; ±5% for 1-29% & 80-99% RH
Power supply	2 AA batteries (not included) or 5V DC
Battery life	Approximately 20 days

Table 13: WS-1700 Rain Buddy Specifications

MAINTENANCE

Periodically clean debris, insects, and dust from the rain gauge funnel and tipping mechanism to keep rainfall readings accurate. Keep the console's battery contacts clean and dry, and replace batteries at the first sign of a weak display or a persistent low-battery icon on DC power. Avoid exposing the console to direct sunlight or moisture, and wipe it with a dry, soft cloth only – do not use solvents or abrasive cleaners.

LIABILITY DISCLAIMER

Please help preserve the environment and return used batteries to an authorized depot. Electrical and electronic waste contains hazardous substances; disposal in unauthorized locations can seriously damage the environment.

Reading this user manual is highly recommended. The manufacturer and supplier cannot accept responsibility for incorrect readings or any consequences resulting from an inaccurate reading.

This product is designed for home use as an indication of weather conditions only. It is not intended for medical use or public safety purposes.

Specifications are subject to change without prior notice.

This product is not a toy. Keep out of the reach of children.

No part of this manual may be reproduced without written authorization from the manufacturer.

Ambient, LLC will not assume liability for incidental, consequential, punitive, or other similar damages associated with the operation or malfunction of this product.

FCC STATEMENT

Statement According to FCC Part 15.19

This device complies with part 15 of the FCC rules.
Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Statement According to FCC Part 15.21

Modifications not expressly approved by this company could void the user's authority to operate the equipment.

Statement According to FCC Part 15.105

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 a minimum distance of 20cm between the radiator and your body. Use only the supplied antenna.

Industry Canada (IC) Statement

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, and (2) this device

must accept any interference, including interference that may cause undesired operation of the device.

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.

WARRANTY INFORMATION

Ambient, LLC provides a 2-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 applies only to the original purchaser. To receive warranty service, the purchaser must contact Ambient, LLC for problem determination and service procedures.

Warranty service can only be performed by Ambient, LLC. The original dated bill of sale must be presented upon request as proof of purchase.

Your Ambient, LLC warranty covers all defects in material and workmanship, with the following exceptions: (1) damage caused by accident, unreasonable use, or neglect; (2) damage resulting from failure to follow the instructions in this manual; (3) damage resulting from repairs or alterations by anyone other than an authorized Ambient, LLC service center; (4) units used for other than personal use; (5) applications and uses this product was not intended for; (6) the product's inability to receive a signal due to interference or metal obstructions; and (7) extreme acts of nature, such as lightning strikes or floods.

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

CALIFORNIA PROP 65

WARNING: *Use of Ambient Weather products can expose you to chemicals, including lead and lead compounds, which are known to the State of California to cause cancer, and bisphenol A (BPA), and phthalates DINP and/or DEHP, which are known to the State of California to cause birth defects or other reproductive harm.*

Can I Trust That Ambient Weather Products Are Safe Despite This Warning?

In 1986, California voters approved the Safe Drinking Water and Toxic Enforcement Act, known as Proposition 65. Its purpose is to ensure people are informed about exposure to chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm. Companies operating in or selling into California must comply with its requirements, including providing a clear and reasonable warning before knowingly exposing anyone to a listed chemical.

Although our manufacturing process is lead-free and RoHS compliant, trace amounts of lead could conceivably be found in components or subassemblies. Bisphenol A could be present in minute amounts in plastic housings, lenses, labels, or adhesives, and phthalates could possibly be found in PVC wire coatings of cables, housings, or power cords.

While using Ambient Weather products as intended, we believe any potential exposure is negligible and well within the no significant risk range. However, to comply with California law and our customers' right to know, we have elected to place the Proposition 65 warning on Ambient Weather products.

For more information about California's Proposition 65, visit https://oehha.ca.gov/prop65/background/p65plain.html

CONTACT & SUPPORT

If any items are missing or incorrect in your shipment, please contact the retailer or platform where you purchased your WS-1700 Rain Buddy for assistance.

For product usage questions, the latest manual, or any other support needs, contact our customer support team at support@ambientweather.com. We're happy to help.

Follow Ambient Weather on social media for setup videos, tips, and product updates.

CUSTOMER SERVICE

Email Support:
support@ambientweather.com

Technical Support:
480-346-3380 (M-F 8am to 3pm Arizona Time)

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