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# Ambient Weather WS-0202 Advanced Weather Station User Manual



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## 1. Introduction

Thank you for your purchase of the Ambient Weather WS-0202 Wireless Rain Gauge with Indoor Temperature. The following user guide provides step by step instructions for installation, operation and troubleshooting. To download the latest manual and additional troubleshooting tips, please visit:

<http://ambientweather.wikispaces.com/ws0202>

## 2. Getting Started

 **Note:** The power up sequence must be performed in the order shown in this section (remote rain gauge transmitter first, Display Console second).

The WS-0202 weather station consists of a display console (receiver), and a rain gauge (remote transmitter).


### 2.1 Parts List

| QTY | Item   |
|-----|--|
| 1   | Display Console<br>Frame Dimensions (LxWxH): 4.50 x 2.75 x 1.25 in<br>LCD Dimensions (LxW): 2.0 x 1.5" |
| 1   | Rain Gauge<br>Dimensions (LxWxH): 4.75 x 2.75 x 3"   |

### 2.2 Recommend Tools

- Philips screwdriver
- Drill for mounting rain gauge

### 2.3 Rain Gauge Sensor Set Up

 **Note:** To avoid permanent damage, please take note of the battery polarity before inserting the batteries.

1. Remove the rain gauge cover, as shown in Figure 1. Push in the side tabs on both sides of the rain gauge cover and lift to expose the base.
2. Remove the battery cover, as shown in Figure 2. Lift both sides of the battery cover, exposing the battery compartment.
3. Insert two AA batteries into the battery compartment , as shown in Figure 3. Replace the battery cover and the rain gauge cover.

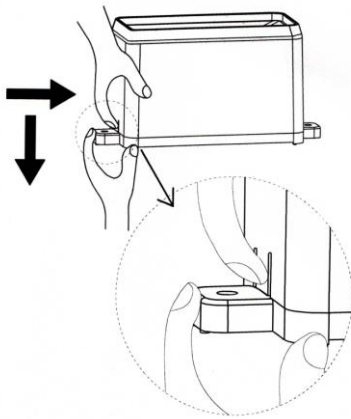


Figure 1

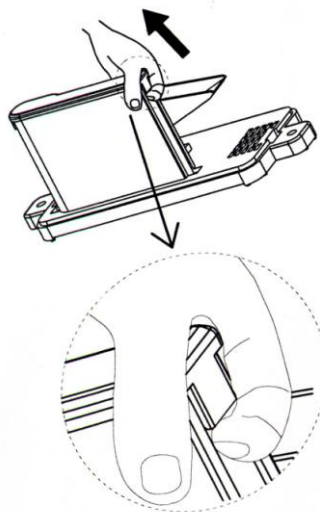


Figure 2

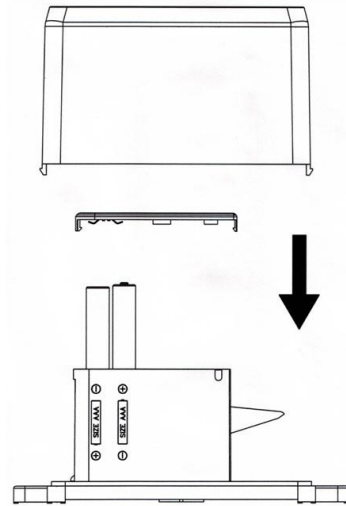



Figure 3

## 2.4 Display Console Set Up

 **Note:** To avoid permanent damage, please take note of the battery polarity before inserting the batteries.

Move the rain gauge at least 10' away from the display console (if the sensor is too close, it may not be received by the display console).

Remove the battery door on the back of the display. Insert two AA (alkaline or lithium, avoid rechargeable) batteries in the back of the display console.

The display will light up for a few seconds to verify all segments are operating properly.

Replace the battery door, and fold out the desk stand and place the console in the upright position.

The console will instantly display indoor temperature, date and time. The rainfall will update on the display within a few minutes. Do not touch any buttons until the remote sensor reports in, otherwise the remote sensor search mode will be terminated. When the remote sensor data has been received, the console will automatically switch to the normal mode, and all further settings can be performed.

If the remote does not update, please reference the troubleshooting guide in Section 7.

## 2.5 Radio Controlled Clock (RCC)

After the remote sensor is powered up, the sensor will transmit weather data for 30 seconds, and then the sensor will begin radio controlled clock (RCC) reception. During the RCC time reception period (maximum 10 minutes), no weather data will be transmitted to avoid interference.

If the signal reception is not successful within 1 minute, the signal search will be cancelled and will automatically resume every two hours until the signal is successfully captured. The regular RF link will resume once RCC reception routine is finished. In some locations, RCC reception may take a couple of days to receive the signal.

### 3. Remote Sensor Installation

It is recommended you mount the rain gauge sensor on a flat, well drained surface, where there is no vibration.

Use 2 screws (not included) to affix the rain gauge to a flat surface.

### 4. Console Operation



**Note:** The console has two keys for easy operation: **SET** key, **RAIN** key.

Any program mode can be exited by waiting for the 30-second time-out to take effect.

#### 4.1 Set (Program) Mode

While in Normal Mode, press and hold the **SET** key for at least three seconds to enter the Set Mode. The first setting will begin flashing. You can press the **SET** key again to skip any step, as defined below.

1. DST (daylight savings time) ON/OFF
2. Time Zone Setting
3. 12/24 hour format
4. Manual time setting (hours/minutes)
5. Calendar setting (year /month /date)
6. Temperature display units (Celsius or Fahrenheit)
7. Rainfall display units (mm or in)

In the Set mode, press the **RAIN** key to scroll the value. Hold the **RAIN** key for 3 seconds to increase rapidly.

The **SET** mode will return to Normal mode if no key is pressed for 30 seconds.

The following table provides times zones throughout the world. Locations in the eastern hemisphere are positive, and locations in the western hemisphere are negative.

| Hours from GMT | Time Zone   | Cities                     |
|----------------|---|----------------------------|
| -12            | IDLW: International Date Line West  | ---                        |
| -11            | NT: Nome  | Nome, AK                   |
| -10            | AHST: Alaska-Hawaii Standard<br>CAT: Central Alaska<br>HST: Hawaii Standard | Honolulu, HI               |
| -9             | YST: Yukon Standard   | Yukon Territory            |
| -8             | PST: Pacific Standard   | Los Angeles, CA, USA       |
| -7             | MST: Mountain Standard  | Denver, CO, USA            |
| -6             | CST: Central Standard   | Chicago, IL, USA           |
| -5             | EST: Eastern Standard   | New York, NY, USA          |
| -4             | AST: Atlantic Standard  | Caracas                    |
| -3             | ---   | São Paulo, Brazil          |
| -2             | AT: Azores  | Azores, Cape Verde Islands |
| -1             | WAT: West Africa  | ---                        |
| 0              | GMT: Greenwich Mean   | London, England            |

| Hours from GMT | Time Zone  | Cities                  |
|----------------|--|-------------------------|
|                | WET: Western European  |                         |
| 1              | CET: Central European  | Paris, France           |
| 2              | EET: Eastern European  | Athens, Greece          |
| 3              | BT: Baghdad  | Moscow, Russia          |
| 4              | ---  | Abu Dhabi, UAE          |
| 5              | ---  | Tashkent                |
| 6              | ---  | Astana                  |
| 7              | ---  | Bangkok                 |
| 8              | CCT: China Coast   | Beijing                 |
| 9              | JST: Japan Standard  | Tokyo                   |
| 10             | GST: Guam Standard   | Sydney                  |
| 11             | ---  | Magadan                 |
| 12             | IDLE: International Date Line East<br>NZST: New Zealand Standard | Wellington, New Zealand |

## 4.2 Rain Mode

### 4.2.1 Displaying Rainfall

While in normal mode, press the **RAIN** key, and the 1 hour rainfall will be displayed. Press **RAIN** key again, and the 24 hour rainfall will be displayed. Press the **RAIN** key a third time, and the weekly rainfall record will be displayed. Press the **RAIN** key a fourth time, and the **TOTAL** rainfall record will be displayed.

### 4.2.2 Reset Rain Data

Press the **RAIN** key for approximately 3 seconds while displaying **TOTAL** rainfall, and the 1hour, 24hour, week and **TOTAL** rainfall record will be reset to 0.00.

## 5. Glossary of Terms

| Term     | Definition  |
|----------|---|
| Accuracy | Accuracy is defined as the ability of a measurement to match the actual value of the quantity being measured. |
| Range    | Range is defined as the amount or extent a value can be measured.   |

## 6. Specifications

### 6.1 Wireless Specifications

- Line of sight wireless transmission (in open air): 300 feet
- Frequency: 433 MHz
- Update Rate: 48 seconds

## 6.2 Measurement Specifications

The following table provides specifications for the measured parameters.

| Measurement        | Range           | Accuracy | Resolution |
|--------------------|-----------------|----------|------------|
| Indoor Temperature | -15.8 to 140 °F | ± 2 °F   | 0.1 °F     |
| Rain               | 0 to 394 in.    | ± 10%    | 0.01 in    |

## 6.3 Power Consumption

- Base station : 2 x AA 1.5V Alkaline batteries
- Rain gauge : 2 x AAA 1.5V Alkaline batteries
- Battery life: Minimum 12 months for base station  
Minimum 24 months for rain gauge sensor (use lithium batteries in cold weather climates)

## 7. Troubleshooting Guide

If your question is not answered here, you can contact us as follows:



1. Email Support: [support@ambientweather.com](mailto:support@ambientweather.com)
2. Live Chat Support: [www.ambientweather.com/chat.html](http://www.ambientweather.com/chat.html) (M-F 8am to 4pm Arizona Time)
3. Technical Support: 480-283-1644 (M-F 8am to 4pm Arizona Time)

| Problem  | Solution   |
|--|--|
| <p>Wireless remote (rain gauge) not reporting in to console.</p> <p>There are dashes on the display console.</p> | <p>The maximum line of sight communication range is 300'. Move the sensor assembly closer to the display console.</p> <p>If the sensor assembly is too close (less than 10'), move the sensor assembly away from the display console.</p> <p>Cycle power on the console. The console may have exited the search mode.</p> <p>Install a fresh set of batteries in the remote rain gauge. For cold weather environments, install lithium batteries.</p> <p>Make sure the remote sensors are not transmitting through solid metal (acts as an RF shield), or earth barrier (down a hill).</p> <p>Move the display console around electrical noise generating devices, such as computers, TVs and other wireless transmitters or receivers.</p> <p>Move the remote sensor to a higher location. Move the remote sensor to a closer location.</p> <p>Radio Frequency (RF) Sensors cannot transmit through metal barriers (example, aluminum siding) or multiple, thick walls.</p> |
| Indoor temperature sensor innacurate   | Check/ Replace the batteries. Also make sure that the base station is not placed near objects that can act as  |

| Problem                          | Solution   |
|----------------------------------|--|
|                                  | sources of heat or cold.                                 |
| Display console contrast is weak | Replace console batteries with a fresh set of batteries. |

## 8. Accessories

The following software and hardware accessories are available for this weather station at [www.AmbientWeather.com](http://www.AmbientWeather.com).

| Accessory   | Image   | Description   |
|---|---|---|
| <a href="#">Energizer AAA Lithium Battery (2-pack) - Batteries for Long Life and Cold Weather</a> |  | AAA lithium batteries for cold weather climates.  |
| <a href="#">Ambient Weather RG100 Rain Gauge Mounting Shelf</a>                                   |  | Made with UV inhibited ABS plastic, universal rain gauge mounting shelf and hardware mounts to a fence post or mounting pole. |

## 9. Liability Disclaimer

Please help in the preservation of the environment and return used batteries to an authorized depot. The electrical and electronic wastes contain hazardous substances. Disposal of electronic waste in wild country and/or in unauthorized grounds strongly damages the environment.

Reading the “User manual” is highly recommended. The manufacturer and supplier cannot accept any responsibility for any incorrect readings and any consequences that occur should an inaccurate reading take place.

This product is designed for use in the home only as indication of weather conditions. This product is not to be used for medical purposes or for public information.

The specifications of this product may 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 of 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.

## 10. 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:

1. This device may not cause harmful interference.
2. 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:**

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.

## 11. Warranty Information

Ambient, LLC provides 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 Ambient, LLC for problem determination and service procedures.

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

Your Ambient, LLC warranty covers all defects in material and workmanship with the following specified exceptions: (1) damage caused by accident, unreasonable use or neglect (lack of reasonable and necessary maintenance); (2) damage resulting from failure to follow instructions contained in your owner's manual; (3) damage resulting from the performance of repairs or alterations by someone other than an authorized Ambient, LLC authorized service center; (4) units used for other than home use (5) applications and uses that this product was not intended (6) the products inability to receive a signal due to any source of 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 from a fixed installation, normal set-up or adjustments, claims based on misrepresentation by the seller or performance variations resulting from installation-related circumstances.

