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# Ambient Weather WS-26 Indoor Thermo-Hygrometer with Daily Min/Max Display User Manual



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## 1 Introduction

Thank you for your purchase of the Ambient Weather WS-26 Indoor Thermo-Hygrometer with Daily Min/Max Display. 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/ws26>

## 2 Getting Started

The WS-26 weather station consists of a display console.

### Parts List

QTY	Item
1	Display Console Frame Dimensions (LxHxW): 4.50 x 5.0 x 1.00 in LCD Dimensions (LxW): 3.75 x 3.50" LCD Segment Height: 1.25 inches
1	User Manual

1. Remove the battery door on the back of the display, as shown in Figure 1. Insert four AAA (alkaline or lithium, avoid rechargeable) batteries in the back of the display console. All of the LCD segments will light up for a few seconds to verify all segments are operating properly.

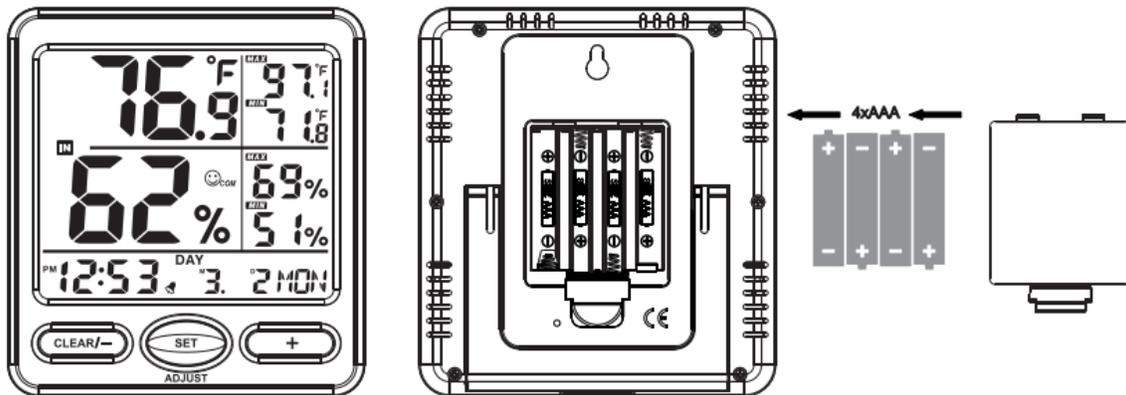


Figure 1

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

The console will instantly display time, indoor temperature and humidity as designated by the **IN** icon.

### 3 Display Console Layout

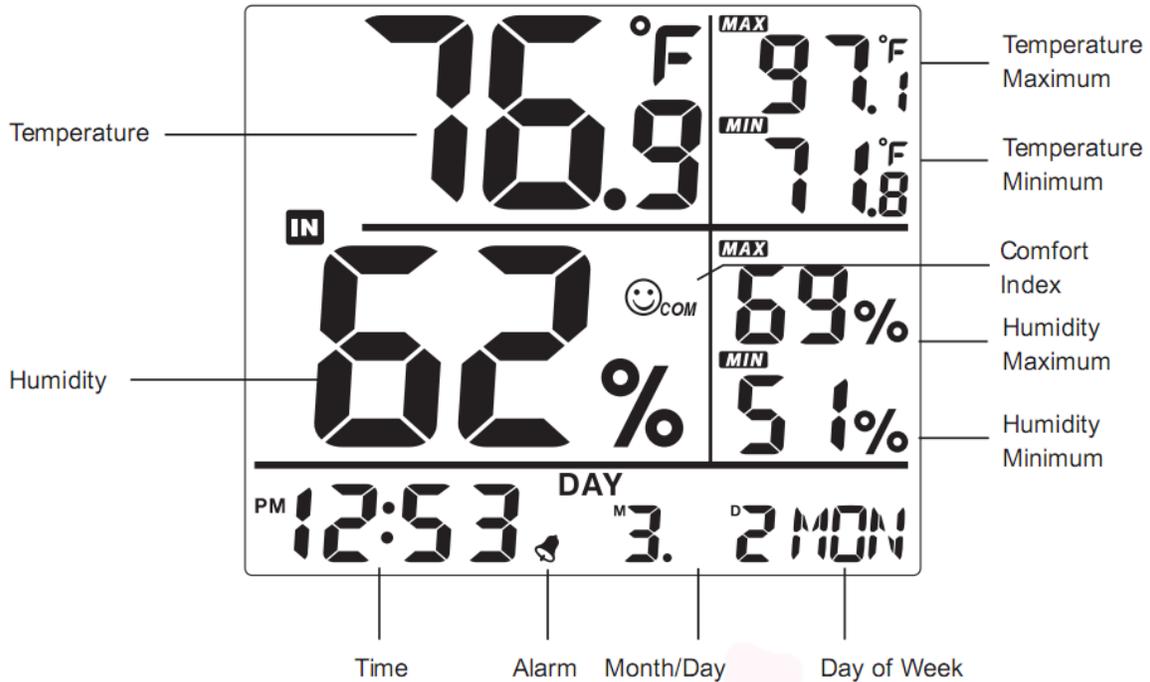


Figure 2

### 4 Display Features

#### 4.1 Comfort Icon

The comfort icon is based on humidity ranges specified in Figure 3. The icon is displayed for indoor humidity.

RH < 45%	RH 45%~65%	RH > 65%
		
Dry	Comfortable	Wet

Figure 3

### 5 Console Operation

 **Note:** The console has three buttons for easy operation: **CLEAR/-** button, **SET/ADJUST** button, and **[+]** button.

#### 5.1 Set Mode

The Set Mode allows you to set the date and time format, date and time, time alarm, units of measure and Min/Max clear.

To enter the set mode, press and hold the **SET** key for 3 seconds

1. **12 hr/24 hr time format.** Press the **[+]** key to switch between 12 and 24 hour format. Press the **SET** key to advance to the next setting.

2. **Hour.** Press the [+] or [-] key to increase or decrease the hour. Press the **SET** key to advance to the next setting.
3. **Minute.** Press the [+] or [-] key to increase or decrease the minute. Press the **SET** key to advance to the next setting.
4. **Month-Day/Day-Month format.** Press the [+] key to switch between mm-dd and dd-mm date format. Press the **SET** key to advance to the next setting.
5. **Month.** Press the [+] or [-] key to increase or decrease the month. Press the **SET** key to advance to the next setting.
6. **Day.** Press the [+] or [-] key to increase or decrease the day. Press the **SET** key to advance to the next setting.
7. **Year.** Press the [+] or [-] key to increase or decrease the year. Press the **SET** key to advance to the next setting.
8. **Alarm Hour.** Press the [+] or [-] key to increase or decrease the alarm hour. Press the **SET** key to advance to the next setting.
9. **Alarm Minute.** Press the [+] or [-] key to increase or decrease the alarm minute. Press the **SET** key to advance to the next setting.
10. **Temperature Units of Measure.** Press the [+] or [-] key to switch between °F and °C units of measure. Press the **SET** key to advance to the next setting.
11. **Max/Min Clearing.** The Max/Min can be programmed to clear daily (at midnight) or manually. Press the [+] or [-] key to switch between “Clears Daily” and Clears Manually. Press the **SET** key to exit setting.

## 5.2 Day Month/Year/Alarm Display

Press the **SET** key (do not hold) to toggle between the Day/Month, Year and Alarm Time.

## 5.3 Time Alarm

To turn on and off the Time Alarm, press the **CLEAR/-** button and the alarm icon will appear  when set, and disappear when disabled.

## 5.4 Reset Max/Min

To reset the Max/Min values, press and hold the **CLEAR/-** button for 3 seconds.

## 5.5 Adjustment or Calibration



**Note:** The calibrated value can only be adjusted on the console.



**Note:** The measured humidity range is between 10 and 99%. Humidity cannot be accurately measured outside of this range. Thus, the humidity cannot be calibrated below 10% or above 99%.

The purpose of calibration is to fine tune or correct for any sensor error associated with the devices margin of error. The measurement can be adjusted from the console to calibrate to a known source.

Calibration is only useful if you have a known calibrated source you can compare it against, and is optional. This section discusses practices, procedures and sources for sensor calibration to reduce manufacturing and degradation errors. Do not compare your readings obtained from sources such as the internet, radio, television or newspapers. They are in a different location and typically update once per hour.

The purpose of your weather station is to measure conditions of your surroundings, which vary significantly from location to location.

## 5.5.1 Humidity Calibration

To enter the humidity calibration mode, press and hold the **SET/ADJUST and CLEAR/-** buttons at the same time for 5 seconds and the humidity value will begin flashing. Press the **[+]** button to increase the humidity and the **CLEAR/-** button to decrease the humidity reading in 1% increments. To rapidly increase (or decrease) the humidity reading, press and hold the **[+]** or **CLEAR/-** button.

To return the humidity to the actual or uncalibrated measurement, press the **ADJUST** button.

Once the displayed humidity equals the calibrated source, press and hold the **ADJUST** button for three seconds, or wait 15 seconds for timeout, and the humidity value will stop flashing.

 **Discussion:** Humidity is a difficult parameter to measure electronically and drifts over time due to contamination.

Due to manufacturing tolerances, the humidity is accurate to  $\pm 5\%$ . To improve this accuracy, the humidity can be calibrated using an accurate source, such as a sling psychrometer:

<http://www.ambientweather.com/mafaredspslp.html>

or one step humidpak calibration kits (reference Section 9). You can also use common table salt, water and a plastic bag:

<http://ambientweather.wikispaces.com/ws26>

## 5.5.2 Temperature Calibration

To enter the temperature calibration mode, press and hold the **SET/ADJUST and [+]** buttons at the same time for 5 seconds and the temperature value will begin flashing. Press the **[+]** button to increase the temperature and the **CLEAR/-** button to decrease the temperature reading in  $0.1^\circ$  increments. To rapidly increase (or decrease) the temperature reading, press and hold the **[+]** or **CLEAR/-** button.

To return the temperature to the actual or uncalibrated measurement, press the **ADJUST** button.

Once the displayed temperature equals the calibrated source, press and hold the **ADJUST** button for three seconds, or wait 15 seconds for timeout, and the temperature value will stop flashing.

 **Discussion:** Temperature errors can occur when a sensor is placed too close to a heat source (such as a computer or TV or in a window).

To calibrate temperature, we recommend a mercury or red spirit (fluid) thermometer. Bi-metal (dial) and other digital thermometers are not a good source and have their own margin of error.

## 6 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.
Hygrometer	A hygrometer is a device that measures relative humidity. Relative humidity is a term used to describe the amount or percentage of water vapor that exists in air.
Range	Range is defined as the amount or extent a value can be measured.

## 7 Specifications

### 7.1 Measurement Specifications

The following table provides specifications for the measured parameters.

Measurement	Range	Accuracy	Resolution
Indoor Temperature	32 to 140 °F	± 1 °F	0.1 °F
Indoor Humidity	10 to 99 %	± 5% (only guaranteed between 20 to 90%)	1 %

### 7.2 Power Consumption

- Base station (display console) : 4 x AAA 1.5V Alkaline or Lithium batteries (not included)
- Battery life: Minimum 12 months with high quality batteries. Rechargeable batteries are fine, but may not last as long.

## 8 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. Technical Support: 480-346-3398 (M-F 8am to 3pm Arizona Time)

Problem	Solution
Temperature seems inaccurate	<p>Allow up to one hour for the console to stabilize after installing batteries.</p> <p>Use the calibration feature to match the temperature to a known source.</p>
Humidity seems inaccurate	<p>Allow up to one hour for the console to stabilize after installing batteries.</p> <p>Use the calibration feature to match the temperature to a known source.</p>
Display console contrast is weak	Replace console batteries with a fresh set of batteries.

## 9 Accessories

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

Accessory	Description
<a href="#">Ambient Weather Humidity Calibration Kits</a>	One step calibration kits for digital hygrometers use salt slurry formula to accurately calibrate the hygrometer.

## 10 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.

## 11 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.

## 12 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.

