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# Ambient Weather WS-HT350 Fast Response Air Thermo-Hygrometer with Wet Bulb, Dew Point Meter User Manual



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## 1. Introduction

Thank you for your purchase of the Ambient Weather WS-HT350 Fast Response Thermo-Hygrometer with Wet Bulb, Dew Point Meter. The following user guide provides step by step instructions for, operation and troubleshooting. To download the latest manual and additional troubleshooting tips, please visit:

<http://ambientweather.wikispaces.com/wsht350>

## 2. Getting Started

The WS-HT350 consists of the meter, carrying case and 1 x 9V battery.

### 2.1 Recommend Tools


Philips screwdriver (precision) for battery compartment

### 2.2 Meter Operation

Remove the battery door on the back of the display with a precision screwdriver. Insert the 9V battery (included) into the battery connector and replace the battery door.

Press the Red **Power On** button on the front of the meter until the display begins updating. The

meter is now ready for use.

 **Important Note:** This is an air temperature probe only. **DO NOT SUBMERSE IN LIQUID. DO NOT PLACE IN OPEN FLAME.** This will damage the sensor board and void the warranty. Do not use in extreme cold or extreme hot temperatures (such as an oven or non-ambient environment such as carbon dioxide gas). Only use within the recommended ambient temperature range (-22 °F to 140 °F).

### 3. Display Console Layout

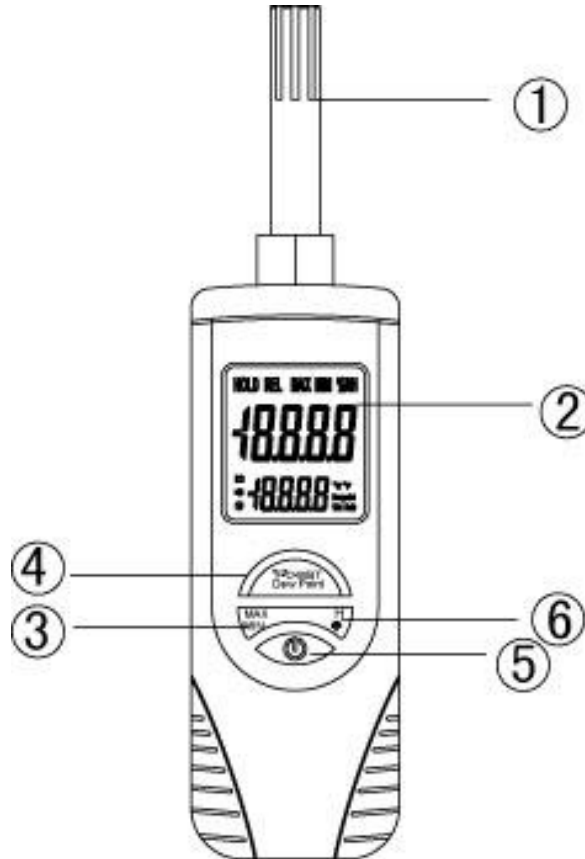


Figure 1

1. Sensor probe. The humidity sensors are located inside this probe tip. **DO NOT SUBMERSE IN LIQUID.**
2. LCD Display
3. MIN / MAX Button
4. °F, °C, Dew Point, Wet Bulb Temperature Selection Button
5. ON / OFF Button
6. BACKLIGHT / HOLD Button

#### 4.1 Display Layout

The LCD display shows the relative humidity in the top portion of the display, and the air temperature, dew point or wet bulb temperature in the bottom portion of the display.

#### 4.2 ON / OFF

To turn on the display, press the **ON/OFF** button. To turn off the display, press the **ON/OFF** button

again.

### 4.3 Min and Max Mode

Press the **MAX / MIN** button once to enter the Min and Max Mode. The maximum humidity and temperature values will be shown since the last reset. The **MAX** icon will be displayed at the top of the display. Press the **MAX / MIN** button again to enter the min mode. The minimum humidity and temperature values will be shown since the last reset. The **MIN** icon will be displayed at the top of the display.

To exit the Min and Max Mode, press the **MAX / MIN** button for two seconds.

### 4.4 °F, °C, Dew Point, Wet Bulb Mode

When powered up for the first time, the display will default displaying Humidity in the top portion of the display and temperature in °F in the bottom portion of the display. Press the **°F->°C->WBT->Dew Point** button to switch between temperature (°F), temperature (°C), Dew Point (°C), Dew Point (°F), Wet Bulb Temperature (°C) and Wet Bulb Temperature (°F). Press the button again to return to temperature (°F).

### 4.5 Backlight and Hold

The hold feature allows you to measure duct or other air flow sources while you are not in a position to view the display. Press the **Hold / Backlight** button to hold the last measured value. Press the **Hold / Backlight** button again to return to normal mode.

To turn on the backlight, press and hold the **Hold / Backlight** button. To turn off the backlight, press and Hold the **Hold / Backlight** button.

## 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.
Dew Point	Dew Point is the temperature at which a given parcel of humid air must be cooled, at constant barometric pressure, for water vapor to condense into water. The condensed water is called dew. The dew point is a saturation temperature.
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.
Wet Bulb Temperature	Wet Bulb Temperature reflects the physical properties of a system with a mixture of a gas and a vapor, usually air and water vapor. Wet bulb temperature is the lowest temperature that can be reached by the evaporation of water only. It is the temperature one feels when one's skin is wet and is exposed to moving air.



## 6. Specifications

### 6.1 Measurement Specifications

The following table provides specifications for the measured parameters.

Measurement	Range	Accuracy	Resolution
Temperature	-22 to 199 °F (-30 to 100 °C)	± 0.9 °F (± 0.5 °C) at 25°C ± 1.5 °F (± 0.8 °C) otherwise	0.01 °F / °C
Humidity	0 to 100%	± 2% from 20 to 80% at 25°C ± 2.5% otherwise	0.01%

### 6.2 Other Specifications and Features

- **Display:** Large 4-1/2 dual digital LCD display with backlight  
**Display Dimensions:** 1.5” x 1.5” (38.1 mm x 38.1 mm)
- **Sensor Type:** Relative humidity and temperature multi sensor module located at the probe tip with calibrated digital output
- **Response Time:** %RH: 10 seconds for stabilization in still air, temperature < 0.4 seconds
- **Sampling Rate:** 0.4 seconds
- **Out of range:** “OL” indication on the display
- **Low battery indication:** The  icon is displayed when the battery voltage drops below the operating level.
- **Operating Conditions:** 32 °F to 104°F (0 °C to 40°C); < 80% RH non-condensing
- **Storage Conditions:** 14 °F to 140 °F (-10 °C to 60°C); <80% RH non-condensing
- **Auto Power Off:** Meter automatically shuts down after 15 minutes of inactivity (Sleep Mode)
- To override Auto Power Off function (Non-Sleep Mode), press and hold the **Hold/Backlight** button, then press power button, after the full display appears, and then release both buttons. The non-sleep mode Icon  will not be displayed on the LCD.
- **Power:** One standard 9V, NEDA1604 or 6F22 battery.
- **Dimensions:** 8.8 (H) x 1.8 (W) x 1.3 (D) or 225 (H) x 45 (W) x 34 (D) mm
- **Weight:** 0.45 lbs (200g)

## 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
Display console contrast is weak	Replace console batteries with a fresh set of batteries.

## 8. 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.

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.

This is not a personal safety device. Do not use for medical related purposes.

Ambient, LLC WILL NOT ASSUME LIABILITY FOR INCIDENTAL, CONSEQUENTIAL, PUNITIVE, OR OTHER SIMILAR DAMAGES ASSOCIATED WITH THE OPERATION OR MALFUNCTION OF THIS PRODUCT.

## 9. 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.

## 10. 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) applications and uses that this product was not intended.

This warranty covers only actual defects within the product itself, and does not cover claims based on misrepresentation by the seller or performance variations.

