
Ambient Weather WM-2 Handheld Wind Meter User Manual



Table of Contents

1.	Introduction	2
2.	Getting Started	2
3.	Function Keys	3
4.	Wind Speed vs. Temperature Display	3
4.1	Wind Speed Display Mode.....	3
4.2	Temperature Display Mode	3
5.	Set Mode	4
6.	Other Features.....	4
6.1	Wind Speed Measuring Range	4
6.2	Wind Speed Hold Feature.....	4
6.3	Beaufort Scale	4
6.4	Temperature Measuring Range.....	5
6.5	Wind Chill	5
6.6	Comfort Level	5
6.7	Low Battery Display	5
6.8	Power Off Mode.....	5
6.9	Tripod Mount	6
7.	Glossary of Terms	6
8.	Specifications.....	7
8.1	General Specifications.....	7
8.2	Measurement Specifications.....	7
9.	Troubleshooting Guide.....	7
10.	Accessories.....	8
11.	Liability Disclaimer.....	8
12.	Warranty Information	8

1. Introduction

Thank you for your purchase of the Ambient Weather WM-2 Wind Meter with Wind Speed, Temperature and Wind Chill. The following user guide provides step by step instructions for installation, operation and troubleshooting.

The WM-2 wind meter features:

- Wind speed in mph, Km/h, m/s, ft/min or Knots
- Beaufort wind scale bar graph
- Wind chill display
- Temperature display in degrees Fahrenheit or Celsius
- Comfort level
- LED backlight
- Wind Speed HOLD feature
- Low battery display
- Neck lanyard included
- Tripod mount (tripod optional)

2. Getting Started

1. Use a large coin to open the battery cover, as shown in Figure 1. Turn counter clockwise to open.
2. Inset the included 3V CR2032 lithium cell battery, with the (+) terminal up.
3. Replace the cover by turning clockwise. All of the LED segments will briefly light up.

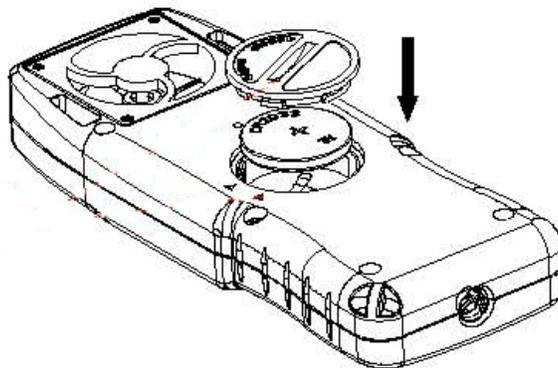


Figure 1

3. Function Keys

- Press the **SET** key to toggle between wind speed and temperature display.
- Press and Hold the **SET** key for 2 seconds to turn on the back light.
- Press and Hold the **SET** key for 3 seconds to power on and off the unit.
- Press and Hold the **SET** key for 4 seconds to clear historical data (high wind speed).
- Press and Hold the **SET** key for 6 seconds to enter the **SET** Mode. The **SET** mode allows you to change units of measure and averaging time frame.

4. Wind Speed vs. Temperature Display

Press the **SET** key to toggle between wind speed and temperature display.

4.1 Wind Speed Display Mode

There are three wind speed display modes:

- Current wind speed (WIND)
- Maximum wind speed (Δ WIND)
- Average wind speed (Φ WIND)

Press the + key to toggle between the three wind speed display modes.

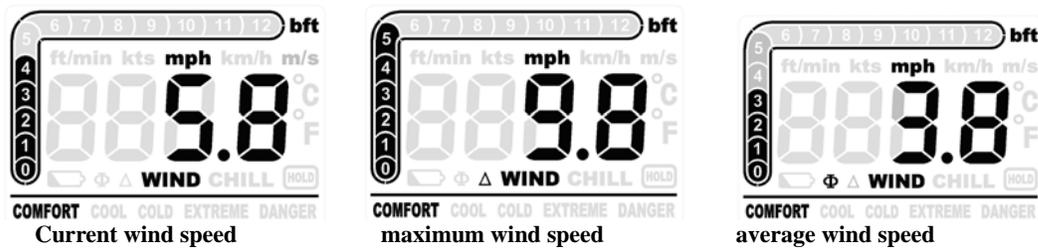


Figure 2

4.2 Temperature Display Mode

There are two temperature display modes:

- Temperature
- Wind Chill

Press the + key to toggle between the two temperature display modes.

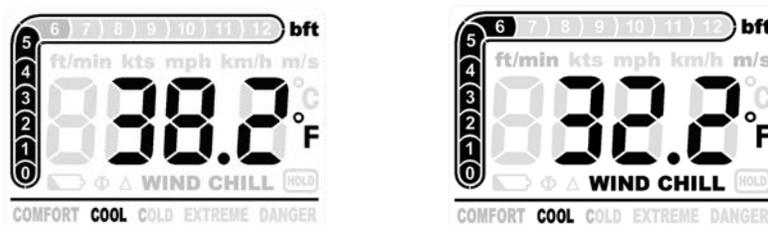


Figure 3

5. Set Mode

Press and Hold the **SET** key for 6 seconds to enter the SET Mode.

1. The wind speed units of measure will begin flashing. Press the + key to cycle between mph, Km/h, m/s, ft/min and Knots. Press the **SET** key to advance to the next step.
2. The temperature units of measure will begin flashing. Press the + key to cycle between °F and °C. Press the **SET** key to advance to the next step.
3. The wind speed average time (in seconds) will begin flashing. Press the + key to change the wind speed average time from 2 to 10 seconds (the default is 4 seconds).



Set speed units



Set temperature units



Set wind speed average time

Figure 4

6. Other Features

6.1 Wind Speed Measuring Range

The wind speed measuring range is 0.4 mph (0.2 m/s) to 67mph (30 m/s),
 If the wind speed is greater than 0.0 mph and less than 0.4mph, the wind speed will display 0.4 mph.
 If the wind speed is greater than 67 mph, the wind speed will display --.-.

6.2 Wind Speed Hold Feature

The wind speed hold feature is ideal for measuring duct air flow and other sources when you are unable to view the display while taking the measurement.

In the wind speed mode, press the **HOLD** key to hold the current wind speed on the display for the speed that just measured as shown in Figure 5. The wind speed does not refresh until the **HOLD** key is pressed again.

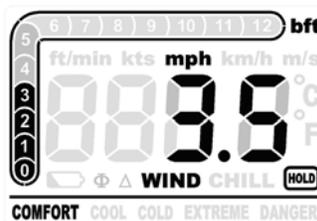


Figure 5

6.3 Beaufort Scale

The Beaufort Scale is displayed on the top and left side of the display, and is defined as follows:

No	Description	m/s	kts	mph	km/h	ft/min
0	Calm	0-0.2	0-1	0-1	0-1	0-58
1	Light air	0.3-1.5	1-3	1-3	1-5	59-314
2	Light breeze	1.6-3.3	4-6	4-7	6-11	315-668
3	Gentle breeze	3.4-5.4	7-10	8-12	12-19	669-1082
4	Moderate breeze	5.5-7.9	11-16	13-18	20-28	1083-1574
5	Fresh breeze	8.0-10.7	17-21	19-24	29-38	1575-2125
6	Strong breeze	10.8-13.8	22-27	25-31	39-49	2126-2735
7	Near gale	13.9-17.1	28-33	32-38	50-61	2736-3385
8	Gale	17.2-20.7	34-40	39-46	62-74	3386-4093
9	Strong gale	20.8-24.4	41-47	47-54	75-88	4094-4822
10	Storm	24.5-28.4	48-55	55-63	89-102	4823-5609
11	Violent storm	28.5-32.6	56-63	64-72	103-117	5610-6417
12	Hurricane force	> 32.6	>63	>72	>117	>6417

6.4 Temperature Measuring Range

The temperature is updated every 10 seconds.

The measure range is from -21.8 °F to 138.2 °F (although the LCD display will fade at lower temperatures).

If the temperature or wind chill is out of range, it will display - -.-.

6.5 Wind Chill

Wind chill is the felt air temperature on exposed skin due to wind. It measures the effect of wind on air temperature. The wind chill temperature is usually lower than the air temperature, since the air temperature is usually lower than the human body temperature. The wind chill is meaningless above 50 °F, and is not displayed (out of range, or - -.-).

6.6 Comfort Level

The bottom of the display shows the comfort level as defined in the following table.

Levels	Temperature
Danger	-13 °F or colder (-25 °C or colder)
Extreme	14 °F to -11 °F (-10 °C to -24 °C)
Cold	50 °F to 15 °F (10 °C to -9 °C)
Cool	52 °F to 67 °F (11 °C to 19 °C)
Comfort	68 °F to 79 °F (20 °C to 26 °C)

6.7 Low Battery Display

The unit will detect the battery voltage after power up. In normal mode, the unit detects low battery every 1 minute. If the battery voltage is low, the icon  will be displayed.

6.8 Power Off Mode

Press and hold down the **SET** key for 3 seconds to switch the unit ON or OFF. In power off mode, the unit will sleep and does not detect wind speed and temperature data. The historical data (high wind speed) will also be cleared.

The meter will automatically switch OFF when no key is pressed and the wind speed is zero for 10

minutes to save battery life.

6.9 Tripod Mount

The wind meter includes a standard tripod mount. The mounting tripod accessory provides hands free operation. Mount the tripod as shown in Figure 6.

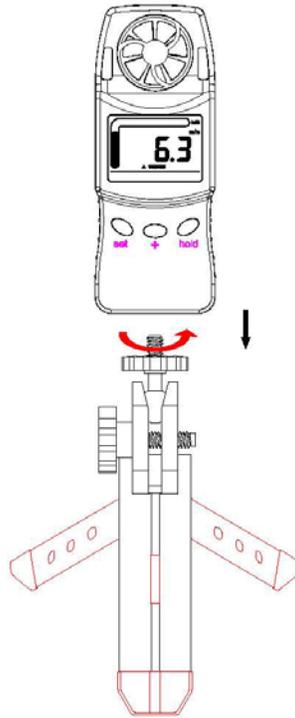


Figure 6

7. 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.
Beaufort Scale	The Beaufort Scale is an empirical measure for describing wind speed based mainly on observed sea conditions (on land it is categorized by the physical effects it has on vegetation and structures). Its full name is the Beaufort Wind Force Scale.
Comfort Level	Comfort level is the body's effect based on ranges of temperature.
Range	Range is defined as the amount or extent a value can be measured.
Wind Chill	Wind chill is the felt air temperature on exposed skin due to wind. It measures the effect of wind on air temperature. The wind chill temperature is usually lower than the air temperature, since the air temperature is usually lower than the human body temperature.

8. Specifications

8.1 General Specifications

- Wind Speed Update Interval: 1 second
- Temperature Update Interval: 10 seconds
- Power Source: 1 x 3V lithium cell (CR2032)
- Battery Life: About 1 year
- Dimensions (L x W x H): 2" x 0.7" x 5.5" (50 x 18 x 140 mm)

8.2 Measurement Specifications

The following table provides specifications for the measured parameters.

Measurement	Range	Accuracy	Resolution
Temperature	-28 to 138.2 °F -29.9°C to +59°C	+/- 2 °F (1 °C)	0.2 °F 0.1 °C
Wind Speed	0.4 mph to 67 mph	+/- 3%	0.1 mph

9. Troubleshooting Guide

To download the latest manual and additional troubleshooting tips, please visit:

<http://ambientweather.wikispaces.com/wm2>

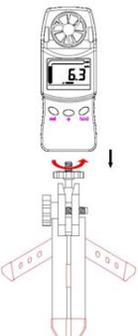
If your question is not answered here, you can contact us as follows:

1. Email Support: support@ambientweather.com
2. Live Chat Support: 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
Wind Chill shows --.-	The wind chill is meaningless above 50 °F, and is not displayed (out of range, or -.-).
Impeller appears imbalanced.	It is normal for the impeller to oscillate as it comes to a stop, and it is not imbalanced. The unit contains a very small magnet that responds to the earth's magnetic fields. This does not affect the accuracy of the wind speed readings and only appears when breaking or accelerating.
Vane is noisy at high speed.	This is normal for the vane to vibrate at high speed. Do not operate above 67 mph. Above 67 mph, the unit will display ---.
Display is dim or disappears.	The LCD display will not operate below approximately 14 °F. Use the warmth of your body or environment for use in cold weather conditions, or Battery is dead. Replace the battery.

10. Accessories

The following software and hardware accessories are available for this weather station at www.AmbientWeather.com.

Accessory	Image	Description
Silva Polaris Handheld Compass for Anemometer Calibration		Handheld compass for wind direction.
Ambient Outdoors CR2032 3 Volt Lithium Button Cell Battery		Standard CR2032 3 Volt Lithium Battery (1 battery)
Ambient Weather WM-TRIPOD Tripod for Wind Meters		Tripod for wind meters.

11. 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.

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 hobbyist use (5) applications and uses that this product was not intended and (6) 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.

