Handheld Anemometer

Instruction Manual

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1. Introduction

Congratulations on purchasing this pocket-sized anemometer. This innovative product provides wind speed, wind chill, temperature, barometric and altitude information for any outdoor activity. The operation of this product is simple and straightforward and by reading this operating manual, users will receive the optimum benefits of all its features.

2. Inventory of contents

1) 1x Anemometer
2) 1x Tripod
3) 1 x 3V (CR2032) lithium cell
4) 1x Instruction manual

3. Features

1) Wind speed measure in mph, Km/h, m/s, ft/min or Knots
2) Wind speed in Beaufort wind scale bar graph
3) Wind chill display
4) Temperature display in degrees Fahrenheit or Celsius
5) Barometric display in hPa, inHg, mmHg
6) ABS/REL/MAX altitude display.
7) LED backlight
8) Low battery detection and display
9) Neck lanyard included
10) Tripod mounted

4. Setting up

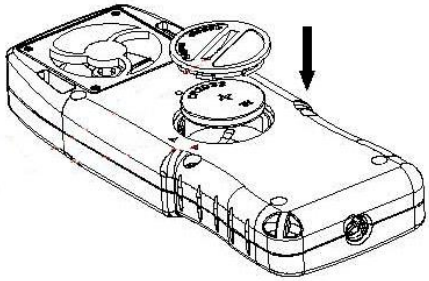


Figure 1

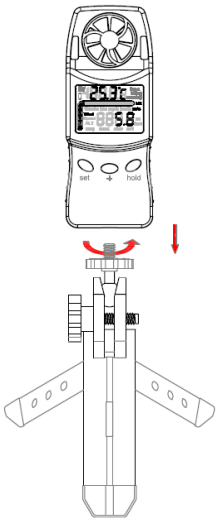


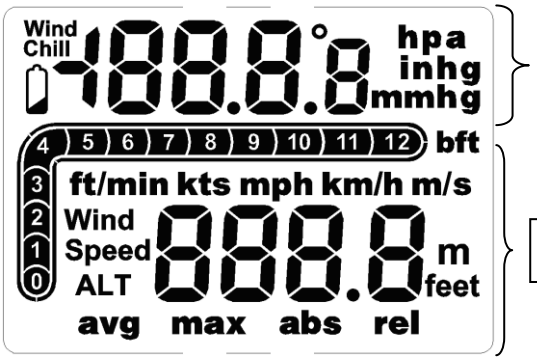
Figure 2

1) First use a large coin to open the battery cover at the back of the anemometer as indicated above.
2) Checking the correct polarization, insert 1 x 3V (CR2032) lithium cell, positive (+) pole up into the battery compartment and replace the cover as figure 1.
3) When the battery is inserted, all the segments of the LCD and backlight will light up briefly.

The anemometer can be tripod mounted as figure 2

5. Display Sections:

The display is divided into 2 sections as below figure shows:



Sub display: 1.display temperature/wind chill under wind speed mode. 2. Display barometric and temperature under Altitude mode.

Main display: Wind speed/Altitude display modes

6. Function keys:

The anemometer uses the following keys:

6.1 SET key:

- In normal mode, press this key to toggle between Wind speed/Altitude modes.
- In setting mode, press this key can change set item, if now set the last item, then press this key to out of setting mode.
- Press the key for 2s to enter the setting mode (default set item is wind speed unit)
- Press the key for 4s to power off the unit. Press the key for 2s again to power on the unit.

***6.2 LIGHT** key* :

- In the wind speed mode, press to toggle between temperature/wind chill
- In the Altitude mode, press to toggle between barometric and temperature.
- Press the key for 2s to turn on the backlight for 8s.

***6.3** + key:*

- In wind speed mode, press it to change the display current WIND (default) →maximum WIND →Average WIND.
- In wind speed mode, hold this key for 2 seconds, current/Max/Average wind speeds will be cleared.
- In the Altitude mode, press it to change the display Current Relative Altitude (default) →Maximum Current Altitude →Absolute Altitude.
- When display the Current Relative altitude, hold the key for 2 seconds, the current altitude can be set as “0”.
- When display the Maximum Relative Altitude，hold the key for 2 seconds, the Maximum Relative Altitude will be cleared.

7. Wind Speed& Temperature vs. Altitude& Baromtric display

Pressing the **“SET”** key to toggle between wind speed and altitude display

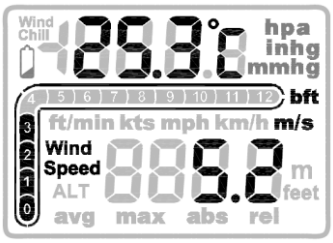
7.1 Wind Speed& Temperature Display Mode

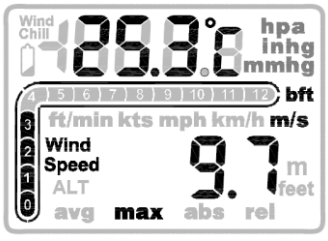
7.1.1 *Wind Speed Display*

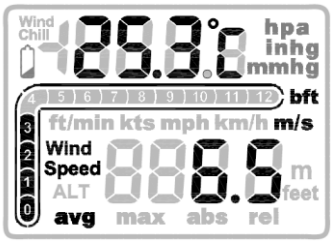
There are three wind speed display modes:

- Current wind speed (WIND)
- Maximum wind speed (ΔWIND)
- Average wind speed ((ΦWIND)

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







Current wind speed **maximum wind speed** **average wind speed**

Current wind speed: device will measure the current speed and update every 1.5 seconds.

Maximum wind speed: During the measuring, the Maximum value of wind speed logged. It will be cleared after a restart.

Average wind speed: The average value of recent 10 times measurements of wind speed..

Wind speed measuring range

The wind speed measuring range is 1mph(0.3m/s) ~ 67mph(30m/s), if the speed between 0.0m/s and 0.3m/s,the wind speed will show 0m/s,and if the speed over 30m/s,the wind speed will show "--.-".

Note:

1. It will stop measuring wind speed once exit wind speed mode.

2. If no wind speed or no button operation within 30 minutes under wind speed mode, it power off automatically.

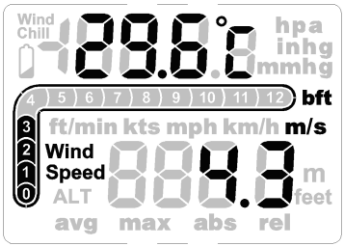
3. Current, maximum and average wind speed will be cleared after power off.

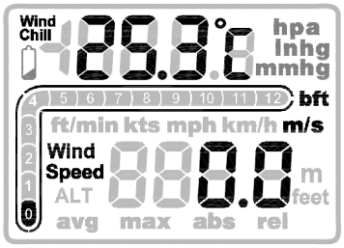
7.1.2 Temperature Display

There are two temperature display modes:

- Temperature
- Wind Chill

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





Temperature **Wind Chill**

Current temperature:

The anemometer measures temperature in real time and updated every 1 minute. The Temperature measuring(and wind chill) range is -30℃-60℃. If the temperature out of range, it display "- -.-". and the wind chill also display "--.-".

Wind Chill

The anemometer calculates automatically wind chill, which can provide useful information for preparing outdoor activities in cold weather. “Wind chill” provides an indication of how cold it feels given the combined effects of the actual air temperature and the wind speed. Wind chill temperature is only defined for temperatures at or below 50 °F(10 °C) and wind speeds above 4.8 kilometers per hour. Wind chill temperature will be the same as current temperature above 50 °F(10 °C).

7.2 Altitude& Baromtric display

7.2.1 *Altitude Display*

There are three altitude display modes:

- Relative Altitude
- Maximum Altitude
- Absolute Altitude

Press the + key to toggle among the three altitude display modes.

Relative Altitude

Maximum Relative Altitude

Absolute Altitude.

Absolute Altitude

With the increasing of altitude, the barometric will be decreasing accordingly. The anemometer will calculate the altitude of current position relative to the horizon, based on the changing of barometric value.

Relative Altitude

The altitude at the spot when the anemometer is powered on will be set as “0”.

Note: *The altitude (both ABS and REL Altitudes) will show” --.-” if the barometric is out of the range 600-1100hPa.*

7.2.2 *Barometric Display*

Press the Light key to toggle between barometric and temperature display modes.

Barometric

temperature

Barometric

When user select the barometric display, the anemometer will measure and update the barometric every 3 seconds in the first 3 minutes. After 3 minutes, the updating interval becomes 1 minute. And the ABS/REL altitude will be calculated based on barometric values.

Note: *The barometric will show" --.-" if the barometric is out of the range 600-1100hPa.*

Note: *If no button operation within 24 hours under altitude mode, it power off automatically.*

8. SET Mode

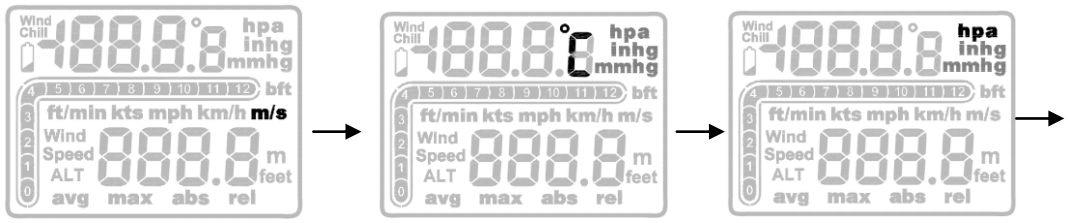
Press and hold the "**SET**" key for 2 seconds to enter the setting mode.

(1) The wind speed unit will display and flash. Press "**+**" key to cycle among m/s, Km/h, mph, Knots and ft/min. Press "**SET**" key to confirm and advance to the next step.

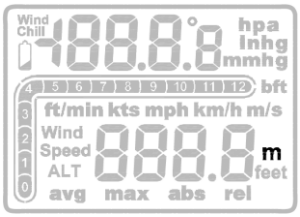
(2) The temperature unit will begin flashing. Press "**+**" key to cycle between °C and °F. Press "**SET**" key to confirm and advance to the next step.

(3) The barometric unit will begin flashing. Press "**+**" key to cycle among hPa, inHg, mmHg. Press "**SET**" key to confirm and advance to the next step.

(4) The altitude unit will begin flashing. Press "**+**" key to cycle between m, feet. Press "**SET**" key to confirm and advance to the next step.



Set Wind speed unit **Set temperature unit** **Set barometric unit**



Set altitude unit

Long press the "**SET**" key to exit the Setting mode and enter to measuring mode. Press and hold the "**SET**" key for 4 seconds can enter the Power Off status,

Note:*If no key operation in 15s, the unit will return to the normal mode automatically.*

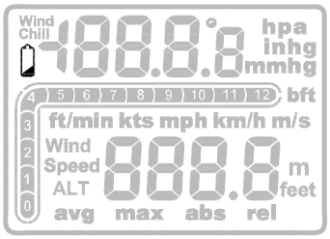
9. Other features

9.1 Beaufort wind scale (bft)

The Beaufort scale is displayed in bar graph (0-12). This is a system for estimating wind force without the use of instruments based on the visible effects of the wind on the physical environment.

Beaufort scale					
	m/s	kts	mph	km/h	ft/min
0	0-0.2	0-1	0-1	0-1	0-58
1	0.3-1.5	1-3	1-3	1-5	59-314
2	1.6-3.3	4-6	4-7	6-11	315-668
3	3.4-5.4	7-10	8-12	12-19	669-1082
4	5.5-7.9	11-16	13-18	20-28	1083-1574
5	8.0-10.7	17-21	19-24	29-38	1575-2125
6	10.8-13.8	22-27	25-31	39-49	2126-2735
7	13.9-17.1	28-33	32-38	50-61	2736-3385
8	17.2-20.7	34-40	39-46	62-74	3386-4093
9	20.8-24.4	41-47	47-54	75-88	4094-4822
10	24.5-28.4	48-55	55-63	89-102	4823-5609
11	28.5-32.6	56-63	64-72	103-117	5610-6417
12	〉32.6	>63	>72	>117	>6417

9.2 Low battery display



The unit will detect the voltage of battery just after power on. Innormal mode, the unit detects low battery every 10 minute. In power off mode do not detect it, if the battery voltage is low, the icon will be displayed.

9.3 Power ON/OFF

Press and hold down the "**SET**" key for 4 seconds to switch the unit ON or OFF. In power off mode the unit will sleep and do not detect the wind speed and temperature data, all the history data will be cleared too.

In Wind speed mode, the meter will automatically switch OFF when no key is pressed and the wind speed is zero for 30 minutes to save battery life.

In Altitude display mode, the meter will automatically switch OFF when no key is pressed for 24hours to save battery life.

10. 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.

11. Specification

Recommended operating temperatures : -29.9°C to +59°C with 0.1°C resolution
(-21.8 °F to 138.2 °F with 0.2° resolution)
("---"displayed if outside this range)
Temperature checking interval : every 1 minute
Wind speed measuring range : 1.5m/s - 30 m/s (3.3 mph - 67mph)
Barometric measuring range 600-1100hPa
Altitude measuring range -500m-3000m
Power source : 1 x 3V lithium cell (CR2032)
Battery life : Approximately 12 months
Dimensions (L x W x H) : 50 x 18 x 140 mm (2" x 0.7" x 5.5")

12. Troubleshooting Guide

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.