ANEMOMETER

MODEL: EM2250

NEED HELP? CONTACT US!

Have product questions? Need technical support? Please feel free to contact us:

This is the original instruction, please read all manual instructions carefully before operating. VEVOR reserves a clear interpretation of our user manual. The appearance of the product shall be subject to the product you received. Please forgive us that we won't inform you again if there are any technology or software updates on our product.

	Warning-To reduce the risk of injury, user must read instructions manual carefully.
	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, and (2)this device must accept any interference received, including interference that may cause undesired operation.
	This product is subject to the provision of European Directive 2012/19/EC. The symbol showing a wheelie bin crossed through indicates that the product requires separate refuse collection in the European Union. This applies to the product and all accessories marked with this symbol. Products marked as such may not be discarded with normal domestic waste, but must be taken to a collection point for recycling electrical and electronic devices

INTRODUCTION

This anemometer can be used to measure wind velocity, air flow, and temperature (wind temperature and wind chill temperature). It is a very useful test tool.

FEATURES

- Instantaneous wind velocity, air flow and temperature measurements.
- Measurements of maximum wind velocity, minimum wind velocity and average wind velocity.
- Measurements of maximum air flow, minimum air flow, average air flow and 2/3Vmax air flow.
- Measurements of maximum temperature, minimum temperature and average temperature.
- Five kinds of wind velocity measurement units to select from.
- Two kinds of air flow measurement units to select from.
- Two kinds of temperature measurement units to select from.
- Area setting for air flow, with two unit options.
- Wind force indication.
- Wind chill temperature calculation.
- Manual/automatic storage of instantaneous wind velocity, air flow and

temperature measurement readings

- Presettable interval (0.5 - 600.0 secs) of automatic saving of readings.
- Storage of up to 999 sets of readings in the built-in EPROM.
- Recall of stored wind velocity, air flow or temperature reading.
- Data retention during power loss.
- Erasure of all stored readings at one time.
- Data transmission.
- Battery charge level indication.
- Auto power off.
- Overrange indication.
- Data hold.

WARNING

● Before use, inspect the vane unit for crack and missing plastic.Do not use this meter if it is damaged.

● When the battery charge level indicator shows "  ", the batteries are not high enough and must be replaced immediately.

● Do not use the meter if it operates abnormally.

● Do not use the meter where explosive gas, vapor or dust is present.

● The meter is not waterproof, do not use the meter in rain.

● When servicing the meter, use only specified replacement parts.

● Do not use the meter with the battery cover or case open.

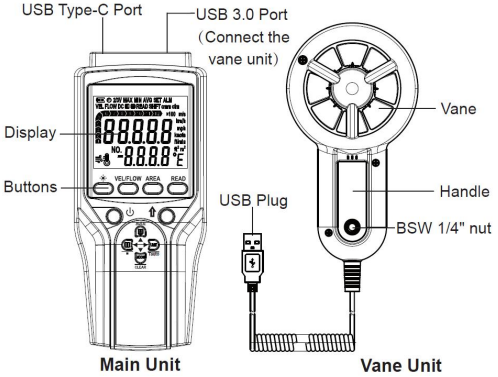
● When installing battery, make sure that the polarity connections are correct.

CHECK UP

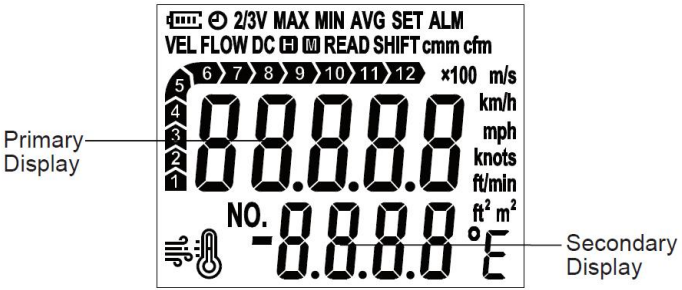
Carefully unpack your package and ensure that you have the following items. In case that any item is missing or if you find any mismatch or damage, promptly contact the purchasing office.

- ● Anemometer unit----------1 piece
- ● Vane unit----------1 piece
- ● 1.5V AAA battery----------4 pieces
- ● USB Type-C data cable----------1 piece
- ● Users manual----------1 piece

METER INSTRUCTION



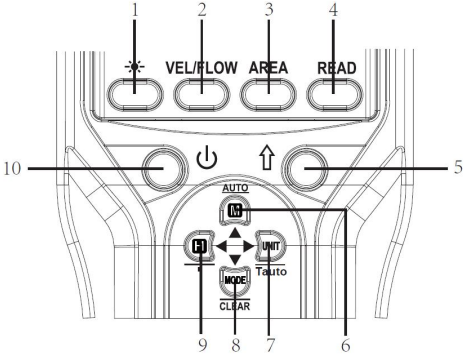
THE DISPLAY



	Symbol	Description
1		Battery charge level indicator.
2		Automatic power-off feature is enabled.
3	2/3V	2/3Vmax air flow reading is being shown on the primary display.
4	MAX	Maximum reading is being shown on the primary display.
5	MIN	Minimum reading is being shown on the primary display.
6	AVG	Average reading is being shown on the primary display.
7	SET	The meter is in setting mode.
8	ALM	An alarm symbol which indicates that the vane unit is disconnected.
9	VEL	Wind velocity
10	FLOW	Air flow
11	DC	Data are being transmitted to the computer software.
12	H	The readings are locked.
13	M	Flashing symbol on the display indicates that the meter is saving data. Steady display of the symbol indicates that the EPROM is full.
14	READ	Stored data are being displayed.
15	SHIFT	The secondary function of buttons is enabled.

16		Beaufort scale, which is used to indicate wind force.
17		Wind chill temperature
18	NO.	Record number
19	x100	The current air flow is ⩾100000. (When it is⩾10000, "x10 " will be displayed).
20	m/s	Meters per second. The unit of velocity.
21	km/h	Kilometers per hour. The unit of velocity.
22	ft/min	Feet per minute. The unit of velocity.
23	knots	Nautical miles per hour. The unit of velocity.
24	mph	Miles per hour. The unit of velocity.
25	ft^2	Square feet. The unit of area.
26	m^2	Square meter. The unit of area.
27	cmm	Cubic meters per minute.The unit of flow.
28	cfm	Cubic feet per minute. The unit of flow.
29	°C	Celsius degree. The unit of temperature.
30	°F	Fahrenheit degree. The unit of temperature.

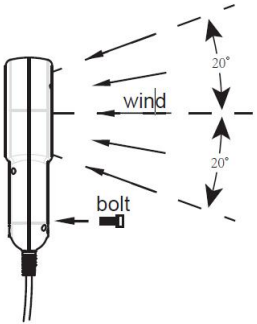
BUTTONS



	Button	Description
1	☀	Used to turn on or off the backlight.
2	**VEL/FLOW**	Used to switch between wind velocity and air flow measurement mode.
3	**AREA**	Used to enter or exit area setting mode.
4	**READ**	Used to enter or exit the mode of recalling stored data.
5	⇧	Used to enable other button's secondary function. If the other button do not have a secondary function, pressing it will have no effect.

6	AUTO / M	Used to save the present readings or to stop automatic saving of readings. **Secondary Function:** Used to start automatic saving of the present readings at preset intervals.
7	UNIT / Tauto	Used to select a desired measurement unit or to exit the setting mode of saving interval of automatic storage. **Secondary Function:** Used to enter the setting mode of saving interval of automatic storage.
8	MODE / CLEAR	Used to enter MAX/MIN/AVG/2/3VMAX recording mode as well as to display maximum reading, minimum reading, average reading and 2/3Vmax reading. **Secondary Function:** When recalling the storage, press and hold this button to erase stored data.
9	H / ▪	Used to lock the present reading on the display. **Secondary Function:** Used to move the decimal point when you set the area for air flow measurements.
10	⏻	Used to turn on or off the meter ; Used to enable or disable the automatic power-off feature.

OPERATION INSTRUCTION



Vane Unit
(sideview)

Tips：

1. To ensure measurement accuracy, you should hold the Vane Unit so that the air flow passes through the vanes from the back to the front (the back is where the mounting thread is located) and keep the axis of the vanes within 20° of the wind direction during measurement .
2. If necessary, you can mount the Vane Unit on other object or a tripod using a BSW 1/4" bolt (not included). (Refer to the above Figure .)

CONNECTING THE VANE UNIT

The plug of the Vane Unit is to be inserted in the port (USB 3.0 Port)at the top of the main unit. The plug and the port are keyed so that the plug can only fit in the port one way.

TURNING ON THE METER

1. Install four new batteries (1.5V, AAA or equivalent) into the battery compartment, the display will show all segments briefly.
2. Press the " ⏻ " button to turn on the meter.Note: If the Vane Unit is not connected or if the contact between the plug and the port is bad, the display will show " Err " , "---", and the symbol " ***ALM*** ". The meter is unable to measure and store data.

TURNING ON/OFF THE BACKLIGHT

Press the " ☼ " button to turn on or off the backlight, if necessary.

ENABLING AND DISABLING THE AUTOMATIC POWER-OFF

When the meter is not in automatic data saving or data transmission,you can hold down the " ⏻ " button for about 2 secs to enable or disable the automatic power-off feature. When the automatic power-off feature is enabled, " 🕘 " is displayed as an indicator.Except in automatic data saving or data transmission, the meter will turn off automatically if there is no button press for about 5 minutes.

ENABLING AND DISABLING THE SECONDARY FUNCTION

Press the " ⇧ " button to enable the secondary function of other buttons. The display will show the symbol " SHIFT " . Then you can press any other button to display the secondary function interface.If there is no secondary function, pressing that button will have no effect.

Press the " ⇧ " button again to disable the secondary function of other buttons, the symbol " SHIFT " will disappear.

SELECTING THE WIND VELOCITY/AIR FLOW MEASUREMENT

In the instantaneous measurement mode, press the " VEL/FLOW " button to select either the Wind Velocity Measurement Mode (indicated by the symbol " VEL " showed on the display) or the Air Flow Measurement Mode (indicated by the symbol " FLOW " showed on the display).

LOCKING/UNLOCKING THE READINGS

In measurement mode, briefly press the " H " button to enrter the Data Hold mode. The present readings are locked and the symbol " H "appears on the display as an indicator.

To exit the Data Hold mode, briefly press this " H " button again. The readings are unlocked and the symbol " H " disappears.

SELECTING A DESIRED UNIT

In instantaneous measurement mode, you can press the "UNIT/Tauto "button once to enter the unit setting mode. The display shows the symbol " SET ". You can repeatedly press the" UNIT/Tauto " button to scroll through the"m/s", "km/h", "mph", "knots", "ft/min", "cmm", "cfm", " ºC "," ºF ", " "°C"and " "°F" units. When the desired unit appears,release the button. About 2 secs later, the meter saves the unit automatically and exits the unit setting mode.(The setting is not saved after power loss.)

SWITCHING DISPLAY BETWEEN WIND TEMPERATURE AND WIND

Press the "UNIT/Tauto" button to select the corresponding unit to switch display between wind temperature and wind chill temperature.

SETTING THE AREA FOR AIR FLOW MEASUREMENT

Before measuring air flow, ensure that the area setting of the meter matches the area of the air-duct to be tested; or the measurement results will be wrong.

1. In the instantaneous measurement mode, press the " AREA " button to display the area setting interface.

   The display will show " SET ".And the secondary display will show the present area setting (with a default value of 1.000) and the leftmost digit of this area setting will flash.

2. You can press the " ◀ " or " ▶ ' button to select a desired digit or unit to adjust, which will flash as an

   indication; and then press the " ▼ " or " ▲ " button to adjust the value of selected digit or change the unit.

   You can press the " ⇧ " button once, and then press the "H/· " button to move the decimal point.

   Use the methods mentioned above to adjust the area setting on the secondary display until it matches the area of the air-duct to be tested.

   Tip: The meter's area setting range is 0.001 - 9999ft2 or 0.001 -9999m2.

3. After you finish setting the area, press the "AREA" button once to save the area setting and return to the instantaneous measurement mode. (Settings are not saved after power loss.)

SETTING THE AREA FOR AIR FLOW MEASUREMENT

1. Press the " ⏻ " button to turn on the meter. The display shows " VEL " and the meter is in instantaneous wind velocity measurement mode.
2. Hold the Vane Unit so that the air flow will pass through the vanes from the back to the front. To ensure measurement accuracy, keep the axis of the vanes within 20° of the wind direction.
3. Wait for 2 secs for reading to stabilize, then read the wind velocity reading.
4. In instantaneous wind velocity measurement mode, you can press the " MODE / CLEAR " button to display the maximum wind velocity reading (indicated by the symbol " MAX "), minimum wind velocity reading(indicated by the symbol " MIN ") or average wind velocity reading (indicated by the symbol " AVG ") of all readings taken since the measurement started.
5. When the display shows the average wind velocity reading, you can press the " MODE / CLEAR " button to return to instantaneous wind velocity measurement mode.

MEASURING MAXIMUM AIR FLOW, MINIMUM AIR FLOW, AVERAGE

1. Press the " ⏻ " button to turn on the meter. The display shows 'VEL " and the meter is in instantaneous wind velocity measurement mode.
2. Press the " VEL/FLOW " button to switch to instantaneous air flow measurement mode. The display shows " FLOW " as an indicator.
3. Hold the Vane Unit so that the air flow will pass through the vanes from the back to the front. To ensure measurement accuracy, keep the axis of the vanes within 20° of the wind direction.
4. Wait for 2 secs for reading to stabilize, then read the air flow reading.
5. In instantaneous air flow measurement mode, you can press the" MODE / CLEAR " button to display the maximum air flow reading (indicated by the symbol " MAX "), minimum air flow reading (indicated by the symbol " MIN "), average air flow reading (indicated by the symbol " AVG "), or 2/3Vmax air flow reading (indicated by the symbol " 2/3VMAX ") of all readings taken since the measurement started.
6. When the display shows the 2/3Vmax air flow reading, you can press the " MODE / CLEAR " button to return to the instantaneous air flow measurement mode.

Note:

When measuring the maximum/minimun/average wind velocity or air flow, the meter also measures the maximum/minimum/average temperature.

INSTRUCTION FOR AIR FLOW

When the air flow exceeds 9999, the display will show the first four digits of the air flow value. The multiplier " x10 " will be displayed when the air flow is ≥ 10000; and when it is ≥ 100000, the multiplier " x100 " will be shown.

Note: The area should be set before measuring air flow.

INSTRUCTION FOR WIND CHILL TEMPERATURE

After selecting the unit for wind chill temperature, the symbol" " will be displayed. When the wind velocity is ＞ 1.34m/s, and the wind temperature is ≤ 10℃, the wind chill temperature is calculated; when the wind velocity is ≤ 1.34m/s, and the wind temperature is ≤ 10℃, the wind chill temperature is equal to the wind temperature; when the wind temperature is ＞ 10℃, the display shows "Hi".

USING THE DATA STORAGE FUNCTION

1. When measuring instantaneous wind velocity/air flow whose reading is being shown on the primary display, you can save present readings using one of the two following methods:

- Saving present readings manually

While measurement is ongoing, press the " AUTO M " button once; the present readings will be saved in the built-in EPROM, and the display will show the symbol " M " for about 0.5 secs as an indication. After the symbol disappears, you can continue to press this button to save new present readings, and so on.

- Saving present readings automatically at preset intervals

While measurement is ongoing, press the " ⇧ " button once, and then press the " AUTO M " button to start saving readings automatically in the built-in EPROM at preset intervals; the symbol " M " will flash on the display as an indication. (During the automatic storage of present readings, you can not change the unit or

the area or recall stored data.) At any time, you can stop saving readings by pressing the " AUTO / M " button.

2. When the EPROM is full, the symbol " M ' will stop flashing and be shown constantly on the display; in this condition, the meter can not save any more reading in the EPROM. And if you press the " AUTO / M "button again, the display will show " **FULL** ".

3. The stored data includes instantaneous readings of wind velocity,air flow, wind temperature and wind chill temperature.

Note:

1. Before you start automatic saving of readings, make sure that you have set the saving interval to meet your need.

2. Each time before you start saving readings, make sure that the area setting of the meter is correct.

RECALLING STORED DATA

1. In the instantaneous measurement mode, press the " READ " button to recall the stored data. The display shows " READ" as an indicator.And the last saved data and its corresponding record number are displayed on the screen. (The meter defaults to recall the instantaneous wind velocity reading.)

2. You can press the " ▲ " button to increase or the " ▼ " button to decrease record number by 1.

If you press and hold the " ▲ " or " ▼ " button, the record number will increase or decrease rapidly.

3. Use the method mentioned above to select a desired record number.Then press the " ◀ " button or the " ▶ " button to recall the instantaneous wind velocity, air flow, wind temperature or wind chill temperature reading of this record number.

4. Press and hold the " ⇧ " and the " MODE / CLEAR " buttons for about 2 secs to clear the stored data. The display will show " **---** ".

5. Press the " READ " button to exit recall mode, the meter will return to instantaneous measurement mode.

SETTING SAVING INTERVAL OF AUTOMATIC STORAGE OF

1. Press the " ⇧ " button once, and then press the "UNIT/Tauto" button, the display will show the symbols " SET " and " M ".
2. The secondary display shows the present saving interval of automatic storage. You can adjust the saving interval within the range of 0.5 to 600.0 seconds.
3. You can press the " ▲ " button to increase or the " ▼ " button to decrease the saving interval by 0.5 seconds.

   If you press and hold the " ▲ " or " ▼ " button, the saving interval will increase or decrease rapidly.
4. After you finish adjusting the saving interval, press the "UNIT/Tauto" button to save the saving interval ; the meter will return to instantaneous measurement mode. (Settings are not saved after power loss.)

TRANSMITTING DATA

1. Connect the meter to the computer via a USB Type-C data cable. Then open the software.
2. Set up the corresponding serial port in the software, click on the download or record icon, and transmit DC data to the software. During the data transmission, the display will show a flashing symbol " "

Note:

The software supports functions such as charts, and reports. For website downloads, installation, and usage instructions regarding the software, please refer to the software users manual provided at the end.

SPECIFICATIONS

Battery: 1.5V battery, AAA or equivalent, 4 pieces

Operating Environment:

Main Unit —— temperature: 0°C ~ 40°C;relative humidity: < 80%

Vane Unit —— temperature: -10°C ~ 60°C;relative humidity: < 90%

Storage Environment:

Temperature: -20°C ~ 60°C Relative Humidity: < 90%

Overrange Indication:

When the measured wind velocity exceeds 45m/s (162km/h, 8858.3ft/min, 100.8mph, or 87.48knots), the display shows " OL" .

When the wind temperature is below -10°C(14°F), the display shows "Lo"; when it is above 60°C(140°F), the display shows "Hi".

When the air flow exceeds the display range(9999 x 100), the display shows "OL".

When the wind chill temperature is below -27.7°C(-17.8°F), the display shows "Lo"; when it is above 10°C(50°F), the display shows "Hi".

Battery Level Indication:

When the display shows "  ", it indicates that the battery level is sufficient.

When the display shows " ", it indicates that the battery level is in good condition.

When the display shows "  ", it indicates that the battery level is moderate.

When the display shows "  ", it indicates that the battery level is low, and battery replacement is recommended.

When the display shows "  ", it indicates that the battery level is extremly low,the batteries must be replaced.

IP Degree: IP10

Size: Main Unit —— 169mm x75mm x36mm

Vane Unit —— 183mmx92mm x40mm

Weight: 412g

WIND VELOCITY

	Range	Resolution	Accuracy
m/s	0 ~ 45.000	0.034	±(5% + 0.5m/s)
km/h	0 ~ 162.00	0.122	±(5%+1.8km/h)
ft/min	0 ~ 8859.1	6.69	±(5% + 98.4ft/min)
knots	0 ~ 87.480	0.066	±(5% + 0.97knots)
mph	0~ 100.80	0.076	±(5% +1.12mph)

AIR FLOW

	Range	Resolution	Area
cmm	0 ~ 999900	0.001 ~ 100	0 ~ 9999m^2
cfm	0 ~ 999900	0.001 ~ 100	0 ~ 9999ft^2

WIND TEMPERATURE

	Range	Resolution	Accuracy
°C	-10°C ~ 60°C	0.1°C	±2°C
°F	14°F ~ 140°F	0.2°F	±3.6°F

WIND CHILL TEMPERATURE

	Range	Resolution	Condition
°C	-27.7°C ～ 10°C	0.1°C	Ambient temperature: -10°C～10°C Wind Velocity: 1.34m/s～45m/s
°F	-17.8°F ～ 50°F	0.2°F	Ambient temperature: 14°F～50°F Wind Velocity: 1.34m/s～45m/s

BEAUFORT SCALE

	Range	Resolution
Scale	1～12	1

TABLE OF CORRESPONDENCE

Scale	0	1	2	3	4
Wind Velocity	0 ～ 0.2	0.3～1.5	1.6～3.3	3.4～5.4	5.5～7.9

Scale	5	6	7	8
Wind Velocity	8.0～10.7	10.8～13.8	13.9～17.1	17.2～20.7

Scale	9	10	11	12
Wind Velocity	20.8～24.4	24.5～28.4	28.5～32.6	＞32.6

MAINTENANCE

- **Battery Replacement**

When the display shows "  ", the batteries are not high enough and must be replaced immediately.

To replace the batteries, turn off the meter first. Remove the screw on the battery cover and remove the battery cover. Replace the exhausted batteries with new ones of the same type, make sure that the polarity connections are correct. Reinstall the battery cover and the screw.

- **General Maintenance**

1. If you do not use the meter in a long period of time, remove the batteries from the meter to avoid corrosion.

2. Periodically wipe the meter case with damp cloth. Don't use abrasive or solvent.

Note: Don't let any liquid enter the case or the port on the top of the meter.

- Do not store or use the meter in following locations where the meter may be subject to:

a. Splashes of water or high levels of dust.

b. Air with high salt or sulphur content.

c. Air with other gases or chemical materials.

d. High temperature or humidity (above 50℃, 90%) or direct sunlight.

SOFTWARE USERS MANUAL

1. System Requirements

- Minimum 512MB of available RAM
- Minimum 1GB of free hard disk space
- USB 2.0 or 3.0 interface
- Operating System:

Microsoft Windows XP SP3, Windows Vista, Windows 7,Windows 8, Windows 10

- Software for reading CSV and PDF files.

Note: The CSV reading software should support UTF-8 and ANSI encoding.

2. Download

Download the installation file from the following website:

http://www.all-sun.com/app/EM2250_Setup.exe

3. Installation

Double-click the installation file and follow the prompts to complete the installation.

Note:

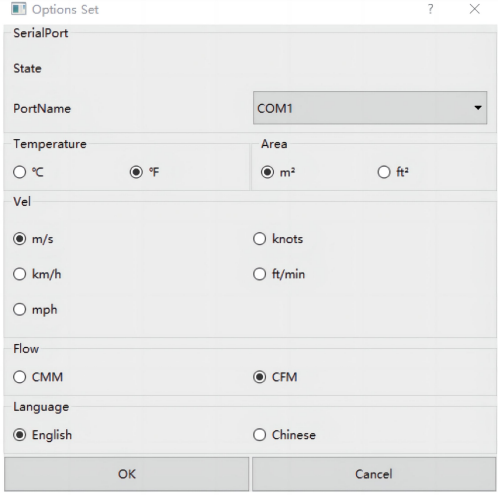
The software must be installed with the system administrator privilege.

4. Initial Setup

Connect the meter to the computer's USB port using a USB Type-C data cable and turn on the meter. Then open the software as an administrator via shortcut and select the appropriate COM port in the settings window. After selecting, click "OK" to apply the settings, and then click "Download" or "Record" to enable the software to receive data transmitted from the meter.

- The functions of the icons in the figure below are as follows, from left to right: Download, Record, Export, Set.

- The option settings window is shown in the figure below.



Note:

Units for wind velocity, air flow, area, and temperature on the meter and computer software are independently adjustable.

The computer software can only connect with one anemometer unit at a time.

NOTE

1. This manual is subject to change without notice.
2. Our company will not take the other responsibilities for any loss.
3. The contents of this manual can not be used as the reason to use the meter for any special application.

LIST OF ACCESSORIES

1. Operating instructions * 1
2. Product lanyard * 1
3. Product carrying case * 1
4. Carbon batteries(AAA) * 4
5. Telescopic line * 1

DISPOSAL OF THIS ARTICLE

Dear Customer,

If you at some point intend to dispose of this article, then please keep in mind that many of its components consist of valuable materials, which can be recycled.

Please do not discharge it in the garbage bin, but check with your local council for recycling facilities in your area.