

Wind Speed Measurement Series

■. Introduction

Wind speed measurement series is composed of the three instrument: Type A(Temperature/Vane anemometer)/Type B(Temperature/Humidity/Vane anemometer)/Type C(Temperature/Air volume/ Vane anemometer). It is normally used to measure the wind speed and volume flow at ventilation outlets. In addition to the measurement of humidity and temperature, climatic conditions can also be analysed.

During use:

- To guarantee correct readings: position instrument so that flow impacts at the rear.
- Do not press the vane sensor.
- The vane sensor should aim at the wind direction.
- When performing the temperature and humidity measurement, in order to ensure the accuracy of the measurement readings, all the interference sources which may affect the measurement results about temperature and humidity (such as the hand)

must be away from the sensor.

■. Features

1. Display: the top display line always shows the velocity or volume, the bottom display line always show the temperature or humidity.

2. Parameters:

Velocity: m/s,km/h,fpm,mph,kts,Beaufort

Air volume: m³/h, m³/s, CFM

Temperature: °C,°F

Humidity: %RH, td

3. Resolution:

Velocity: 0.1m/s, fpm;

Air volume: 1m³/h;

Temperature: 0.1°C 0.1°F;

Humidity: 0.1%RH;

4. Range:

Velocity: 0.4 ~ 20m/s, 80 ~ 4000fpm

Air volume: 99999 m³/h

Temperature: -10 ~ 50°C, 14 ~ 122°F

Humidity: 0 ~+100%RH

5. Accuracy:

Velocity: \pm (2% of reading + 0.3m/s)

\pm (2% of reading + 60fpm)

Air volume: \pm (3% of reading) m³/S

Temperature: \pm 1°C \pm 1.8°F

Humidity: \pm 3%RH (5~95%RH)

6. Sample rate: 2 time /sec

7. Operating environment:

-10°C ~ 50 °C(14°F ~122°F), 0~80%RH

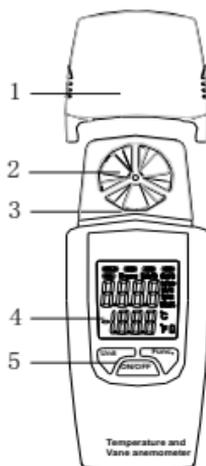
8. Storage environment:

-20°C ~ 60°C(-4°F ~140°F), 0 ~ 80%RH

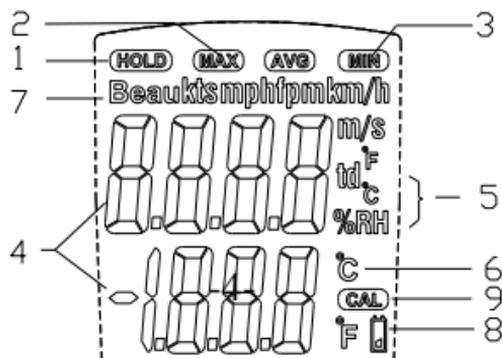
■. Names of parts

Instrument Familiarization

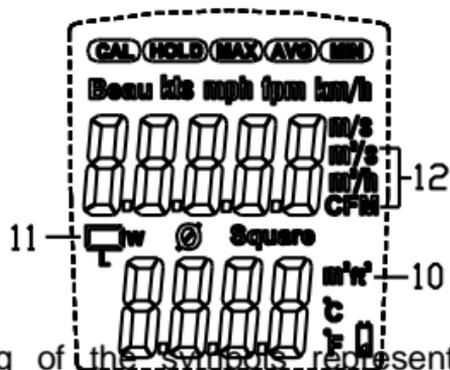
1. Sensor cover
2. Vane sensor
3. Temperature and Humidity sensor
4. LCD display
5. Function key



LCD A(Type A/Type B)

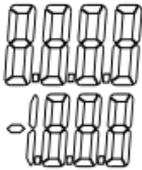


LCD B (Type C)



The meaning of the symbols represented by the following table:

Number of Order	Symbol	Functions
1		Indicating it is now in the data-holding mode
2		Indicating the display value being the maximum value(MAX)

3		Indicating the display value being the minimum value(MIN)
4		Measure values
5		Humidity unit
6		Temperature unit
7		Velocity unit
8		Indication low power of batteries. Batteries should be replaced.
9		Indication to the calibration mode
10		Unit for duct area
11		Type of duct area (square, round, or

		directly input the area)
12	m ³ /h m ³ /s CFM	Air volume unit

■. Operation instruction

Type A(Temperature/Vane anemometer):

1. Press the **ON/OFF** key to turn the power on.
2. To guarantee correct readings: position instrument so that flow impacts at the rear and make the vane sensor upright to the wind direction for measurement.
3. When the reading has been stable, read the value.

Type B(Temperature/Humidity/Vane anemometer):

1. Press the **ON/OFF** key to turn the power on.
2. To guarantee correct readings: position instrument so that flow impacts at the rear and make the vane sensor upright to the wind direction for measurement.
3. When the reading has been stable, read the value.

4. Press the **FUNC.** key to switch the humidity mode.

Type C(Temperature/Air volume/ Vane anemometer):

1. Press the **ON/OFF** key to turn the power on.
2. To guarantee correct readings: position instrument so that flow impacts at the rear and make the vane sensor upright to the wind direction for measurement.
3. When the reading has been stable, read the value.
4. Press the **FUNC.** key to switch the air volume mode.(The duct area should be input firstly.)

■. Keys instruction

Type A(Temperature/Vane anemometer):

1. **ON/OFF** key

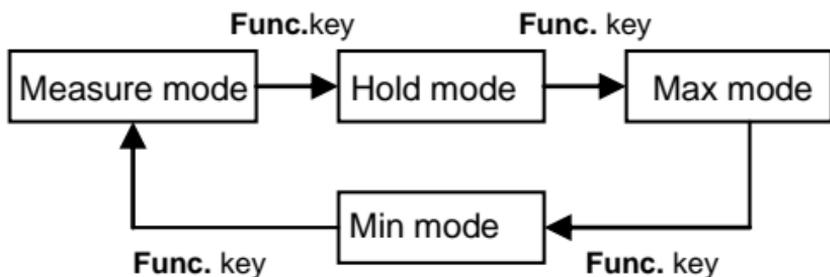
Power ON/OFF function:

Press the key to turn the power ON and press the key once more to turn the power OFF.

2. **Func.** key

1) Press the key to select the state of MAX、MIN、HOLD.

The cycle of views shows as following figure:



- Hold mode: Reading are held.
- Max mode: Maximum values since the instrument was last switched on or last reset.
- Min mode: Minimum values since the instrument was last switched on or last reset.

2) Back light control

Press and hold the **Func.** key >1sec. The back light will be turned on, Press and hold the key once >1sec. the light will be turned off. If the back light is not closed within 60 seconds, it will be turned off automatically.

3. Unit key

1) **Unit and Auto power off** set

Velocity unit:

Press **Unit** key <1sec. to change the Velocity unit.
(m/s, km/s, fpm, mph, kts, Beaufort scale)

Temperature unit:

Press and hold the **Unit** key >1sec. to change the
Temperature unit. (°C, °F)

2) Auto power off

When the meter is powered on, it is under auto power off mode. The meter will power itself off after 20 minutes if no key operation.

Cancelled auto power off function: Press and hold the **ON/OFF** key until the LCD display **AP ON**, .press **Unit** key to select **AP ON** or **AP OFF**, then press the **Func.** key to confirm the setting.

AP ON ----- Auto power off availability.

AP OFF --- Auto power off unavailability.

Type B(Temperature/Humidity/Vane anemometer):

1. **ON/OFF** key

Power ON/OFF function:

Press the key to turn the power ON and press the key once more to turn the power OFF.

2. **FUNC.** key

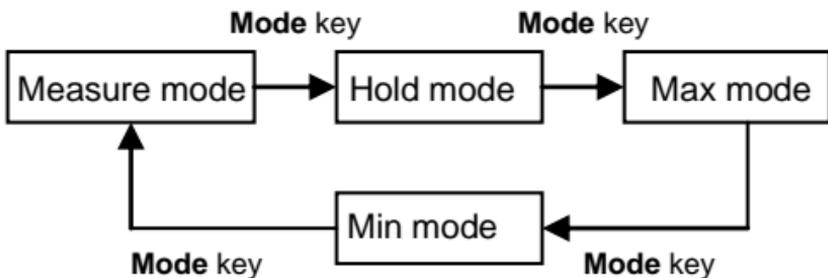
Measurement mode switching function:

Press the key to switch wind speed or humidity measurement.

3. **Mode** key

- 1) Press the key to select the state of MAX、MIN、HOLD.

The cycle of views shows as following figure:



- Hold mode: Reading are held.

- Max mode: Maximum values since the instrument was last switched on or last reset.
- Min mode: Minimum values since the instrument was last switched on or last reset.

2) Back light control

Press and hold the **Mode** key >1sec. The back light will be turned on, Press and hold the key once >1sec. the light will be turned off. If the back light is not closed within 60 seconds, it will be turned off automatically.

4. Unit key

1) Unit set

- Velocity unit.

Press **Unit** key <1sec. to change the Velocity unit.
(m/s, km/s, fpm, mph, kts, Beaufort scale)

- Humidity unit.

Press **Unit** key <1sec. to change the Humidity unit.
(%RH,td °C,td °F)

- Temperature unit.

Press and hold the **Unit** key >1sec. to change the Temperature unit. (°C, °F)

2) Auto power off

When the meter is powered on, it is under auto power off mode. The meter will power itself off after 20 minutes if no key operation.

Cancelled auto power off function: Press and hold the **ON/OFF** key until the LCD display **AP ON**, press **Unit** key to select **AP ON** or **AP OFF**, then press the **Mode** key to confirm the setting.

AP ON ----- Auto power off availability.

AP OFF --- Auto power off unavailability.

Type C(Temperature/Air volume/ Vane anemometer)

Operation instruction:

1. ON/OFF key

Power ON/OFF function:

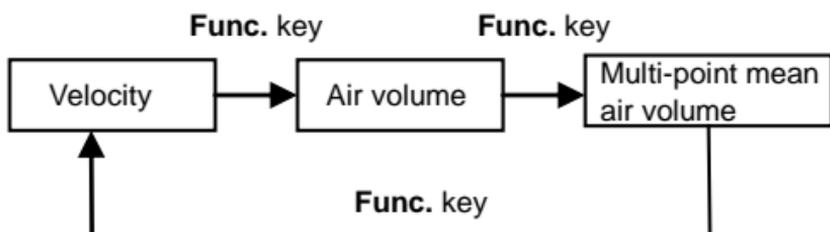
Press the key to turn the power ON and press the

key once more to turn the power OFF.

2. FUNC. key

Measurement mode switching function:

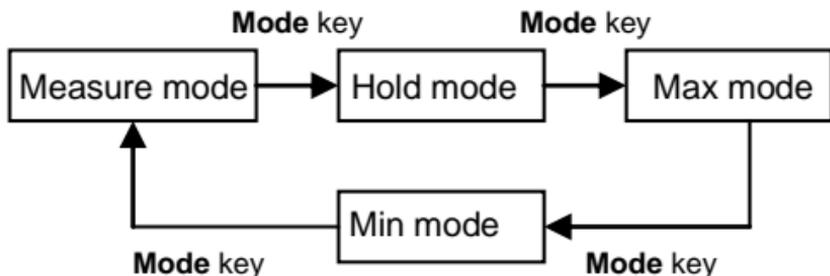
Press the key to switch wind speed, air volume or multi-point mean air volume measurement.



3. MODE key

- 1) Press the key to select the state of MAX, MIN, HOLD.

The cycle of views shows as following figure:



- Hold mode: Reading are held.
- Max mode: Maximum values since the instrument was last switched on or last reset.
- Min mode: Minimum values since the instrument was last switched on or last reset.

2) Pressing the key when multi-point mean measurement is over can select MAX, MIN or average value of the multi-point measurement.

3) Back light control

Press and hold the Mode key >1sec. The back light will be turned on, Press and hold the key once >1sec. the light will be turned off. If the back light is not closed within 60 seconds, it will be turned off automatically.

4) When setting the duct area or multi-point measuring points, pressing the key will reduce the input value.

4. UNIT
▲ key

1) **Unit** set

- Velocity unit.

Press **Unit** key <1sec. to change the Velocity unit.
(m/s, km/s, fpm, mph, kts, Beaufort scale)

- Humidity unit.

Press **Unit** key <1sec. to change the Humidity unit.
(%RH,td^{°C},td^{°F})

- Temperature unit

Press and hold the **Unit** key >1sec. to change the
Temperature unit. (^{°C},^{°F})

2) Auto power off

When the meter is powered on, it is under auto power off mode. The meter will power itself off after 20 minutes if no key operation.

Cancelled auto power off function: Press and hold the **ON/OFF** key until the LCD display **AP ON**, .press **Unit** key to select **AP ON** or **AP OFF**, then press the **Mode** key to confirm the setting.

AP ON ----- Auto power off availability.

AP OFF --- Auto power off unavailability.

3) When setting the duct area or multi-point measuring points, pressing the key will increase the input value.

5. $\frac{\text{SELECT}}{\text{SET}}$ key

1) SET function: In the air volume measurement mode, pressing the key will enter the duct area setting mode, press and hold the key >1sec. to exit the area setting mode. In multi-point mean measurement mode, press the key to set the number of measuring points .

2) SELECT function: In the area setting mode, press the key to select the duct type and the units of duct size.

3) In the area setting mode, press and hold the key >1sec. to exit the area setting mode.

6. $\frac{\text{SQUARE}}{\leftarrow}$ key

- 1) SQUARE function: In the air volume measurement mode, pressing the key can show the duct area in the bottom display line. The bottom display line will return to temperature display if the key is pressed again.
- 2)  function: In the the duct area setting mode, press the key to confirm the duct type and values which have been selected.

In the number of air volume measuring points setting mode, press the key to confirm and exit this mode.

In the multi-point mean measurement mode, press the key to confirm the the air volume value and then enter the next measuring point.

Note:  key and  key are only available in air volume measurement mode.

7. Duct area setting

- ① In the air volume measurement mode, press the

SET key to enter into area setting mode. Three area input modes are optional: square duct (), round duct () or directly input area (**Square**) size;

- ② Press SELECT key to select the mode you want to input (square, round, area). The corresponding symbol will be flashing on the display screen and press the  key to confirm;
- ③ Press SELECT key again to select the units of input value(m,ft,m²,ft²). Similarly, the corresponding unit will be flashing and press the  key to confirm;
- ④ Input value:By pressing the $\frac{\text{MODE}}{\nabla}$ key and the $\frac{\text{UNIT}}{\blacktriangle}$ key to adjust the value of the flashing digit. After pressing the  key to confirm, it will automatically jump to the next one. If the square duct is selected, the width of duct should be set after the length of duct has been set;

Note:

- If round duct is selected, the input value is the

duct's diameter;

- **As the minimum resolution of area is 0.001 m^2 and 0.01 ft^2 , so if the duct cross-section area is less than the minimum resolution, please switch this area to square area; (Such as: If the duct area is 0.0008 m^2 , you can input a square area of length 0.002 m and width 0.4 m)**

8. Multi-point mean air volume measurement

- ① In air volume measurement mode, after the duct area has been set, press FUNC. Key to select multi-point mean air volume measurement mode. Then the top display line will show the air volume, the bottom display line will show the measuring points.
- ② Press SET key to set the number of measuring points(The default is 5 after power on). The number of measuring points will be flashing on the display screen, press $\frac{\text{UNIT}}{\blacktriangle}$ key and $\frac{\text{MODE}}{\blacktriangledown}$ key to increase



or reduce the points. After the the number of measuring points has been set, press key to confirm and exit the setting mode.

- ③ Place the instrument on the DUT point of duct. When the air volume value is stable, press  key to confirm the measurement value and enter the next point of air volume measurement.
- ④ When the final measuring point is confirmed by pressing the  key, the top display line shows the average value of multi-point measurement, the bottom display line shows the number of measuring points. At this time, press MODE key to select MAX or MIN value of measuring points. Pressing  key will start the next round of multi-point mean measurement.

■. Maintenance

1. CLEANING INSTRUCTIONS

The meter may be wiped down with a wet sponge or cloth using a mild water based detergent or anti-bacterial soap and rinsed under a gentle stream of cold water.

NOTE:

This unit is not designed for complete submersion or washing in water.

2. BATTERY REPLACEMENT

Use the following procedure:

When the battery voltage drop below proper operation range the  symbol will appear on the LCD display and the battery need to be replaced.

- Press the battery cover and towards arrowhead direction to open the battery cover.
- Replace the battery with three new 1.5V batteries (AAA).
- Replace the battery cover.

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