AIR FLOW ANEMOMETER INSTRUCTION MANUAL

✧ Thank you for purchasing our company Air Flow Anemometer.
✧ This manual provides relative information on how to use the Air Anemometer and warning in operation Please make some simple test measurement to ensure proper performance of the unit.
✧ To make the best use of this Anemometer, read this Manual thoroughly before use it. Please Keep this Manual Handy for reference.

1. Before Use Notice

Check up

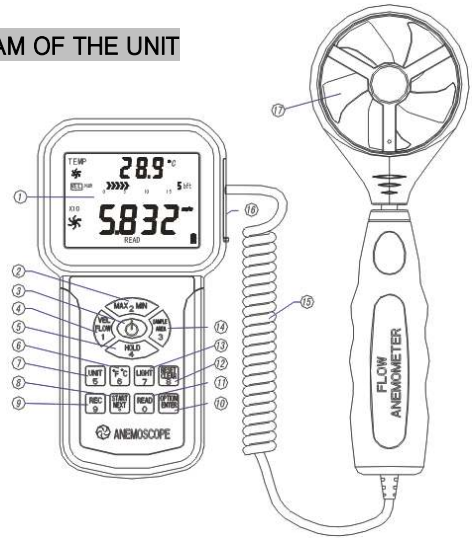
Carefully unpack your kit and ensure that you have the following Items. In case that any items is missing or if you find any mismatch or damage .promptly contact your local dealer.

✧ Air Flow Anemometer unit---------- 1pcs
✧ Wind velocity sensors ---------- 1pcs
✧ Software Disc For Anemometer ---------- 1pcs
✧ USB Computer connecting cable----------1pcs
✧ 6F22 or NEDA 1604 9V battery ----------1pcs
✧ English/Chinese Instruction Manual ----------1pcs
✧ Warranty Card ---------- 1pcs
✧ PP Packing box ---------- 1pcs

Features

✧ Measurement of wind velocity, temperature and flow
✧ Unit conversion of wind velocity, temperature and flow
✧ Measurement of maximum and minimum wind velocity
✧ Measurement of 2/3 V max and average wind flow
✧ Data holding, storing and deleting function
✧ Low battery indicating function
✧ Auto power off function (Power off automatically if no any operation for 5 Minutes)
✧ Memory of 600 records
✧ Backlight function
✧ Connecting to PC by USB cable
✧ Pressing key audio alert
✧ Large LCD display
✧ Wind Handle Can Elongate

DIAGRAM OF THE UNIT

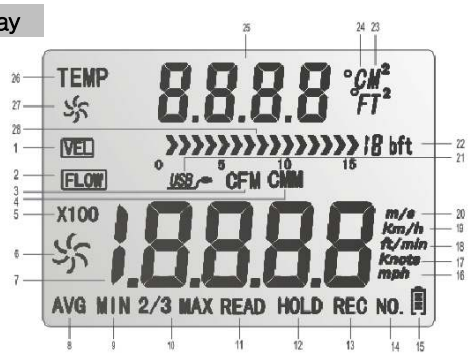


1). LCD display
2). Max/Min value switch
3). Power key: press once to power on, again for two seconds to power off
4). Wind velocity/flow transform key
5). Data holding key
6). Temperature unit switch
7) Unit transform key
8) Measuring key for average value of wind flow.
9) Data record key.
10) Wind flow AVG 2/3 MAX and figure input
11) Read out recorded data key
12) Reset key in "READ" mode/clear recorded
13) Backlight on/off key, press down to start the backlight function, again to cancel.
14) Duct area input and sampling time setting key
15) Connecting wire
16) USB interface: insert one end of the connecting cable to this interface, another to the available USB port of the computer.
17) Wind velocity sensors

NOTE:

Aforesaid key function descriptions are simple introduction.
Pleas read operation instructions parts for details.

LCD Display



1) VEL : When measuring wind velocity, this symbol will appears
2) FLOW : When measuring wind flow, this symbol appears
3) CFM : Wind flow unit (cube foot/minute)
4) CMM : Wind flow unit (cube meter/minute)
5) X100 : If measured value is over 9999, the symbol "X10 " or "X100" will appear.
6) : Big fans : indicate wind velocity /flow status, which was subject to Wind Velocity and revolving.
7) 8.8.8.8 : Wind velocity and flow display area.
8) AVG : When measuring average values (one of the wind flow measuring Method) this symbol appears.
9) MIN : Showing minimum values.
10) 2/3MAX : MAX2/3 of maximum value measurement (one of the wind flow measuring method)
11) READ : This symbol will appear. While Read stored record data.
12) HOLD : Data holding
13) REC : Recording the using number and signals
14) NO. : This symbol and serial number of stored record data will appear. While Read stored record data.
15) : Low battery indicating symbol, please replace battery if this symbol empty.
16) Mph : Wind velocity unit (mile/hour)
17) knots : Wind velocity unit (sea mile/hour)
18) ft/min : Wind velocity unit (foot /minute)
19) km/h : Wind velocity unit (kilometer/hour)
20) m/s : Wind velocity unit (mete r/second)
21) USB : When connecting PC with USB cable, this symbol appears
22) 18 bft : Beaufort scale
23) M^2 : M^2 is used to indicate duct area in square meter when in flow function
T^2 : "T^2" Is used to indicate duct area in square feet when in flow function
24) °C : Wind temperature Celsius unit
°F : Wind temperature Fahrenheit unit
25) 8.8.8.8 : Temperature value display or Duct area display area
26) TEMP : Wind temperature signal.
27) : small fan signal: indicate the Wind Temperature status
28) : Bar graph display of Beaufort scale

SPECIFICATIONS

1. Wind Velocity Range:

Unit	Wind Velocity	Resolution	Lowest Point of start value	Accuracy
m/s	0.0-45.0	0.001	0.3	±3%+0.1rdg
Ft/min	0.0-8800	0.01/0.1/1	60	±3%+20rdg
Knots	0.0-88.0	0.001/0.01	0.6	±3%+0.2rdg
Km/h	0.0-140.0	0.001	1.0	±3%+0.4rdg
Mph	0.0-100	0.001/0.01	0.7	±3%+0.2rdg

2. Wind flow range:
   CMM: 0-999900m^3/min
   CFM: 0-999900 ft^3/min

Unit	Range	Resolution	Area
CMM(M^3/MIN)	0-999900	0.001-100	0.001-9999
CFM(FT^3/MIN)	0-999900	0.001-100	0.001-9999

3. Unit Conversation:

	m/s	Ft/min	Knots	Km/h	Mph
m/s	1	196.87	1.944	3.60	2.24
Ft/min	0.00508	1	0.00987	0.01829	0.01138
Knots	0.5144	101.27	1	1.8519	1.1523
Km/h	0.2778	54.69	0.54	1	0.6222
Mph	0.4464	87.89	0.8679	1.6071	1

4. Air Temperature Range:

Unit	Scale	Resolution	Accuracy
℃	0.0-45.0	0.1	±1.0℃
℉	32.0-113.0	0.1	±1.8℉

5 . Operation Conditions:

	Temperature	Humidity
Host	0-50℃(32-122℉)	≤80%RH
Wind velocity sensors	0-60℃(32-140℉)	

6. Storage Conditions:

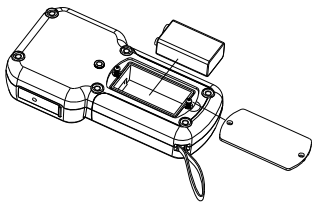
Temperature	-10-60℃(14-140℉)
Humidity	≤80%RH

7. Power supply : 6F22 9V×1
8. Low battery indicating : 6.8V±0.2V
9. Stand by current ≤2μA
10. Operating Current Approx.18mA
11. Battery use life :20H (Continuous Use)
12. Dimensions:
    Meter:163×85×34.5 ㎜
    Vane: 251×72×30 ㎜
13. Net Weight :320.5g (Not Included Battery)

2. Operation

Measurement of Wind Velocity and Temperature

✧ Recover the battery door , and install the batteries properly as shown in figure 1.



✧ Press the " ⏻ " key, all the symbols will be shown on the screen for 1 second, then the unit goes into current wind velocity and temperature measuring mode, the LCD screen shows as following figure2:



Figure 2

✧ Select your desired wind velocity and temperature unit

(1) Press the "UNIT" key, the wind velocity unit will be auto change from (m/s、km/h、ft/min、knots、mph), (default unit is m/s)

(2) Press the "℃/℉" , The temperature will be change between ℃/℉ mode, defaulted as ℃.

✧ Hold the Anemometer with your hand, place the vane in the air flow with the air direction matching the direction of the arrows printed on the inner walls of the vane (Pleas do not extruded the wind velocity sensors leaf. Otherwise will cause the inaccuracy measurement)

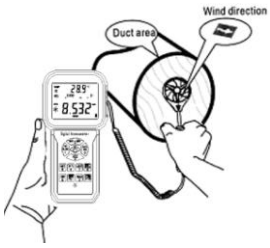


Figure3

(1) Wait for two Sec, to make the data stability

(2) Place the vane in the same direction of the wind to capture the accurate data.

(3) Press "LIGHT" Key to start the Backlight Function, Signal will be display on the LCD press7 sec the led will lighten while the Vane is revolving ,then press "LIGHT" BUTTON the LED will cut off ,signal will disappear and the light function will turn off.

✧ Wind /Air Temperature Measurement

(1) Wind temperature will test out when testing Wind Velocity, Small Vanes pattern will showing along with the display of "TEMP" Symbol.

(2) Press button ℃/℉ to Switch ℃/℉ or (number 6 key).

Note:

a If current is in wind flow measuring mode (on the left top of the LCD will show "FLOW", you can turn it into wind velocity measuring mode by pressing the "VEL/FLOW' key, vice versa.

b The defaulted model is last time you has setting

Measurement of Wind flow

✧ Press the "VEL/FLOW" key to get into "FLOW" mode at this time the LCD screen as shown in figure 4 :



Figure 4

(if the area value has been set before the last setting will be shown)

✧ Select your desired unit of wind flow and duct area:

a Press the "UNIT" key, the wind flow unit will convert between CMM and CFM

b Press the "UNIT" key, the area unit will convert between "M^2" and "FT^2".

c Area unit: "M^2 " and "FT^2" will convert according with the conversion of the wind flow unit.
If wind flow unit is CMM, the area unit will be "M^2";
If wind flow unit is CFM. the area unit will be "FT^2".

✧ Press the "AREA" key, the numbers in the middle of the LCD will be disappeared at this time press numeric keys to enter a new duct area, such as1.2, then press the "ENTER" key to confirm. At this time the LCD screen as shown in figure 5:



Figure 5

✧ Place the vane in the duct area, take measurement of current wind flow value right away. As shown in figure 6 :

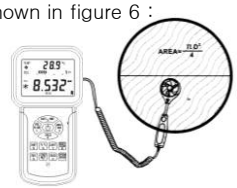


Figure 6

✧ Wind Flow Calculate Formula: Flow =velocity *(Free Area)

✧ Testing Wind velocity : The Bar graphic (showing on the middle of LCD)was subject to the increasing wind Flow/ Velocity

Note:

a without enter the duct area will lead to failing in taking measurement of the wind flow.

If wind flow is larger than 9999, the LCD screen will show x10 or x100, and the measured value is also x10 or x100.

Measurement of 2/3 V max Wind Flow

✧ Press the “VEL/FLOW” key to entre "FLOW" mode, the LCD screen shows in figure 7:



Figure 7

✧ Select your desired unit by pressing the “UNIT” key, for example: select CMM for wind flow unit, “M^2” for area unit ,at this time the LCD screen shows as above diagram.

✧ Press the "AREA " key, Letter on the LCD will disappeared at this time you can input duct area, such as 1.2, press “ENTER” key confirm press again the “OPTION” key to select “2/3 V max”, here the LCD screen as shown in figure 8



Figure 8

✧ Aim the vane of the attached unit at duct area properly, take measurement of 2/3 V max wind flow right away, press again the “OPTION” key exit to measurement of 2/3 V max wind flow.

✧ 2/3 Max Wind flow calculate formula: FLOW =2/3×Max wind Velocity ×duct Area.

MEASUREMENT OF AVERAGE WIND FLOW

✧ Press the “VEL/FLOW” key to get into “FLOW” mode, the LCD screen shows as in figure 9:



Figure 9

✧ Select your desired unit by pressing the “UNIT” key, for example: select CMM for wind flow unit, “M2” for area unit, at this time the LCD screen shows as above diagram

✧ Press the “AREA” key, you can input duct area. such as 1.2, press the “OPTION” key to select “AVERAGE”. the LCD shows as in figure10:



Figure10

Aim the vane at certain point of duct area properly, press the “NEXT” key, on the right bottom of the LCD will show serial number, in the meantime you can take measurement of the first group wind flow values. As shown in figure 11:



Figure 11

Then select another test point, press the “NEXT” key to take measurement of the second group average wind flow values. Repeat above steps to measure as many as 12 groups average wind flow values. As shown in figure 12:



Figure 12

Once again press the "OPTION key exit to measurement of average wind flow.

✧ Average Wind flow calculate formula

Flow =I/N ∑(Velocity)×(free Area)

Note

The average value only displays by pressing NEXT key , If there is wind in the duct area, then the LCD Screen will shows the measured Average Wind flow.

Max and min measurement .

✧ In wind flow and velocity measuring process, press the “MAX/MIN” key to obtain the maximum and minimum values, press again to exit. For example:

(1) When measuring maximum value of wind velocity, a “MAX” will be shown on the upper LCD screen, as shown in figure 13



Figure 13

(2) When measuring minimum value of wind velocity, a “MIN” will be shown on the upper LCD screen, as shown in figure 14:



Figure 14

Note:

Operation of Max/Min wind flow measurement is the same as wind velocity.

Date holding /Storage/Reading and clearing

✧ Data holding:

on Measurement state, press the "HOLD" key to freeze the Data , press the "HOLD' key again return to normal operation.

✧ Data storage:

(1) instantaneous (one-shot) data storage: on Measurement state, set the sampling rate=0 by pressing “SAMPLE” key and in put a "0" sampling time and then press "ENTER". Now, each time "REC" is pressed, the present reading will be stored.

(2) Automatic data storage: on Measurement state, press the “SAMPLE” key and input sampling rate, (the sampling rate from 1-99 seconds using the numeric keys to enter your desire rate,) then press the “ENTER” key to confirm. Press the “REC” key to begin storing readings in every sampling rate. The “REC” icon will appear on the LCD indicated the data storage function is activated. Press again the “REC” key to finish data storage. (Press “REC” Key stop recording.)

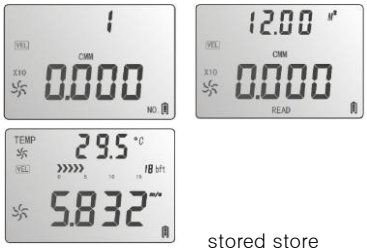
(3) hold the "CLR "button two seconds, and the screen shows "CLR", all the records will be cleared

✧ Reading data stored sequentially:

(1) Press the “READ” key, you can read the stored data in memory sequentially, the LCD will first shows serial number then shows the data. Short Press “RESET” key to return normal operation. In data read, read to 10 if you need testing, once again return to read the state, the data will be then 10 to read (This product can store 600 set of data. When the storage area full, the "full" appeared, Press the "RESET" button back to measurement state) As shown in figure 15:

(2) read the value random

In "READ" state, press the "SAMPLE" button to enter the data read serial number .Then press "ENTER" confirmed that can show, press the "RESET" button to exit



stored store

Figure 15

CONNECTION WITH PC

1. Requirement of computer configuration :
   CPU : Pentium 600MHZ Or above ;
   One free available USB Connecting Interface;
   The lowest screen resolution of monitor is 800*600 (or much higher),color mode;
   At least 8MB available memory;
   At least 50MB available disk memory;
   Operation system: MICROSOFTWINDOWS 98/ME/2000/XP HOME/XP PROFESSIONAL 32BIT.With VBA project digital certificates
2. Install the software from the disc:

✧ Place the attached Disc in your disc driver open the disc driver plate symbol , double click the "setup .exe" program logo , Enter Program installation window, click "NEXT" Enter next interface ,as show in figure16



figure16

✧ Please examination and accept or not to accept this agreement on. click "NEXT" Enter next interface, as show in figure17

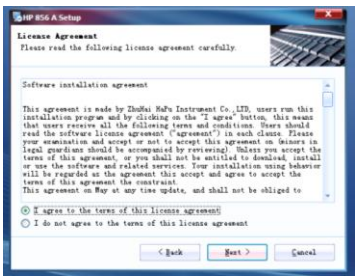


figure17

✧ Input user information, click "NEXT" Enter next interface, as show in figure18

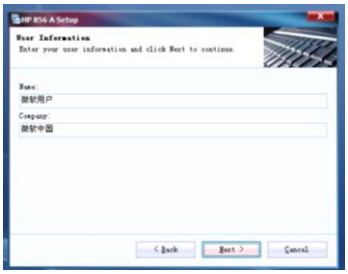


Figure18

✧ Choose the target directory ,then press "next" as show in figure19

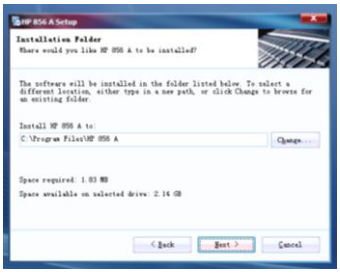


Figure19

✧ Choose whether to create a shortcut, as show in figure20

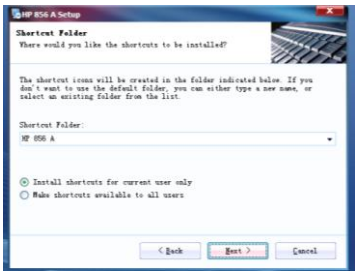


Figure20

✧ This program will confirm whether installed to computer, then press "Install", as show in figure21

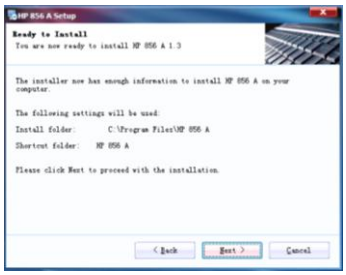


Figure21

✧ Click "Finish" to complete the software installation, and the program will be automatically generated on the tabletop of the PC. as show in figure22



Figure22

3. Software Introduction

Double click the software quick way on the tabletop (start by menu, the route is Start / H856A / 856PC) ,as show in figure23

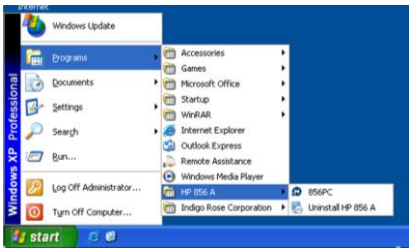


Figure23

Note:

A. If you want to delete this software, pleas open "Controlling Panel" then double check "add/delete program" choose "HG856Arealtime" on the list then click the "delete" button. According to the prompt of the system operation.

B. You can check if Anemometer is connected well with the computer on the state column:
   The Anemometer icon is dynamic: Connection in good state
   The Anemometer icon is still: Failed in connection

✧ Menu Introduction

Order	Order function
Real Time Measure	Real time data measurement, the measured data will real time be shown on the computer.
Open	Open measurement data file that is saved as the LAB format
Save	Save real time measurement data
Exit	Quit the program

✧ Tool bar introduction as shown in following figure:



Button	Function
	Real time data measurement, the measured data will real time be shown on the computer.
	Import data stored in the anemometer to computer
	Open measurement data file that is saved as the LAB format
	Save real time measurement data
	data displayed again.
	Help
	System information
	Close the software

4. Insert one end of the connecting cable into the USB interface of the top anemometer host, as shown in figure 24



Figure24

5.Insert other end of the connecting cable into free interface port of on the computer back, as shown in figure 25

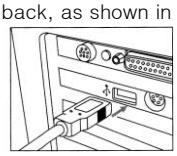


Figure 25

6. Online real time Measurement:

✧ Click “Real Time Measure operation” in “File” menu or Real Time Measure button, enter real time measuring mode. as show in figure.26

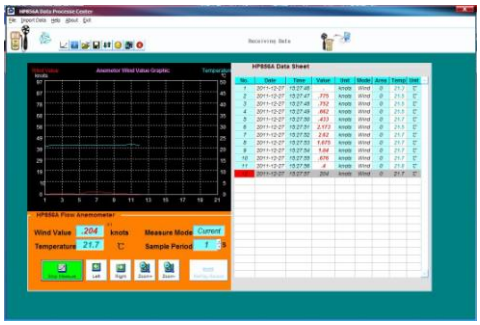


Figure 26

✧ Button introduction:

Button	Function
Start Measure	Click to start real time measurement
RePlay Record	Click it the data displayed again.
Zoom+	Click it the Wind Velocity and Temperature display range getting smaller.
Zoom-	Click it the Wind Velocity and Temperature display range getting bigger.
Left	Click it the Wind Velocity and Temperature move left side.
Right	Click it the Wind Velocity and Temperature move right side.

Note: the computer and the machine for real-time online measurement may not directly disconnected, must secure delete again after pulling USB interface.

Familiar trouble shooting

The following is a list of actions to be to ken if the unit is not working properly:

(1) Screen is blank

Check the battery is inserted correctly. Open the battery door on the bottom rear of the unit. The “+” “–” symbols on the battery should match the corresponding “+” “–” symbols on the inside of the battery compartment.

(2) If the unit can not connect to PC normally, please check the USB cable is OK, if the cable can not be used formally, please replace for a new one.

(3) If the unit can not read the wind flow value properly, please check if the vane is block or not.

(4) If the unit can not read the wind temperature value properly, please check if the heat resistor is fall off or damaged by manual.

(5) If the unit can not read data properly, please check it is operated under the rule temperature and humidity situation.

Note:

When not connecting to PC, the unit will power off automatically after 10 minutes if no any operation after power on.

Maintenance & Warranty

1). Maintenance

✧ Replacing the battery and product maintenance:

a Remove the battery from the unit if it is not required for extended periods of time in order to avoid damage to the battery compartment and the electrode resulting from a leaking battery.

b After power on, if a symbol "[]" appears on the LCD, indicates that you should replace the battery in order to avoid inaccurate measuring reading. Otherwise the battery is very possible leak that will seriously damage the unit life. The battery compartment is on the down rear of the unit, open the battery door, re place the old battery for a new 9V one (notice the battery polarity), close the battery door with a screw knife to lock up.

✧ Cleaning the casing:

✧ Never use alcohol or thinner to clean the unit casing that will especially erode the LCD surface; just clean the unit lightly as needed with little clean water. Never impact the unit or used on humidity condition.

✧ Do not store or use the unit in following locations where the unit 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 (above50℃, 90%) or direct sunlight.

2). Warranty:

✧ About relative warranties please read provided warranty card.

✧ We disclaims any liability due to: transportation damages; incorrect use or operation; manipulation, alterations or repair attempts; without warranty card, invoice.

Specific Declarations:

a The prod u ct design and the manual updating, repairing by technician authorized by us, do not try any alternations or repair attempts.

b Dispose of battery should in accordance with local laws and regulations.

c If in data communication, the interrupt connection, cause the user data loss or system to restart and therefore cause other problems, has nothing to do with our company.

IntelliSafe CE ISO 9001 SGS UKAS

Above picture and content just for your reference. Please be subject to the actual products if anything different or updated. Please pardon for not informing in advance.