

# OPERATION MANUAL

## MINI VANE ANEMOMETER



Model: ■ 89053 C €

## INTRODUCTION

Thank you very much for purchasing this mini vane anemometer.

The meter designed as battery operated for measuring Humidity, Air temp., Dew Point, Wet Bulb, Air Velocity & Volume.

The temperature & humidity sensors are built in the external fan. The compact mini impeller is ideally designed for duct airflow. Duct temperature has no influence on airflow measurement.

This anemometer is a micro processor-based design. A must device for HVAC engineers use. No need to whirl the meter or refer to the chart, easy to get wet bulb & dew point quickly!

### Features :

- **18mm** dia. vane head with 1M long **telescopic& scale marked** tube
- Mini vane probe with **built-in temp. & RH sensor**
- **99** points manually recording points
- **12000** points auto logging points
- **Metric& Imperial** selectable
- **Handheld size**, easy to carry
- **Low** battery indication
- **Fast** response & **Accurate** reading
- **Date & Time** stamp (12-hour or 24-hour)
- Display **Max/Min/Avg.** value
- **Hold** function freezes current readings
- **PC connection** port for data download
- **Sleep and non-sleep** selectable
- Powered by **4 AAA** batteries or **9VDC** adaptor
- **Back light** for dark places

## MATERIAL SUPPLIED

This package contains:

- ✓ The meter x 1
- ✓ Probe (in rubber holder) x1
- ✓ Battery x 4 (AAA size )
- ✓ Operation manual x1
- ✓ Hard carry case x1
- ✓ USB PC connection cable x1
- ✓ Software CD x 1

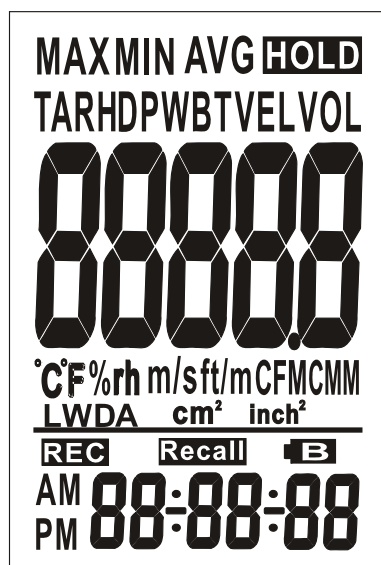
## REMINDER

### Important:

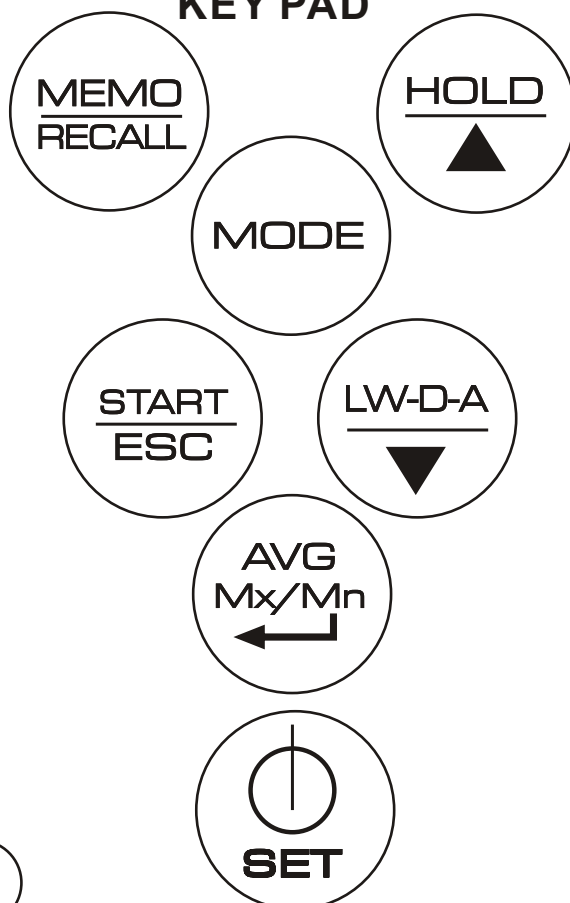
1. This meter is ideally designed for duct airflow measurement. A compact mini impeller is equipped. DON'T hit the probe head or damage the impeller intentionally.
2. The vane probe is well calibrated before shipment and can be purchased individually as spare part. When you replace the probe, just plug and lock the probe.
3. Correctly face the "AIR IN" mark to the wind source for accurate result.

## CONTROLS AND INDICATORS

### LCD DISPLAY



## KEY PAD



- Turn on the meter with auto-sleep mode.
- Turn off the meter at any mode.
- When the meter is off, pressing more than two sec. to enter setup.








- Pressing to select different modes.  
Velocity → Volume → Temp. → Humidity  
Wet Bulb → Dew Point → Velocity



- Pressing to view MIN/MAX/AVG value.
- Press to confirm setting in selection status.



- In normal mode, press this key > 2 sec. to start auto logging
- To stop logging, press again > 2 sec. to stop.
- Press to quit / recall / setup mode

5. 
  - In normal mode, press key to hold the current reading. Press again to unlock.
  - In selection mode, press to adjust up.
6. 
  - In VOL mode, press to program area.
  - In selection mode, press to adjust down
7. 
  - In normal mode, press key to record data manually.
  - Press > 2seconds to review manually recorded data one by one.
8.  + 
  - When the meter is off, press > 2 sec. to enter non-sleep mode.

## SOCKET

1      2      3



1. mini vane probe socket
2. 9V adaptor socket
3. PC connection cable socket



## POWER SUPPLY

This meter is powered by 4pcs AAA batteries or 9VDC adaptor.



Please insert the batteries into the battery compartment with correct polarity and good contact.

## OPERATION

### POWER ON/OFF

1. Connect the mini vane probe to meter.
2. Press “  ” to power on meter.
3. Select parameter per need. The meter starts measurement since power on and update readings every second.
4. Face the probe to wind source and take measurement.
5. Press “  ” to power off meter.

### NON-SLEEP

The meter turns off automatically after 20 minutes of inactivity. To override the function, hold down “  ” & “  ” for 2 seconds to turn on the meter until “ n ” appears. ( Fig.1)

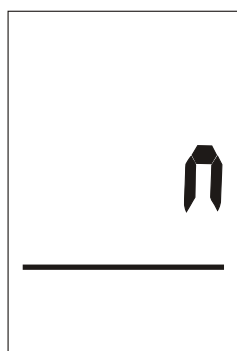


Fig.1

### BACKLIGHT

Press key to activate function will also turn the backlight on for 10 seconds.

### MEASUREMENT

Total 6 parameters for choice. Press “ MODE ” to switch display. The upper display will cycle from velocity, volume, air temp, humidity, wet bulb temp. & Dew point temp. ( Fig.2~7)

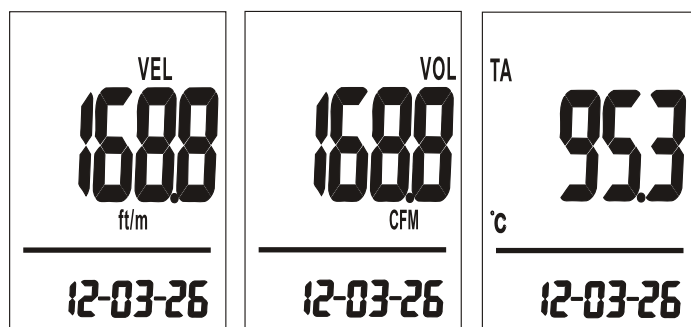


Fig.2

Fig.3

Fig.4

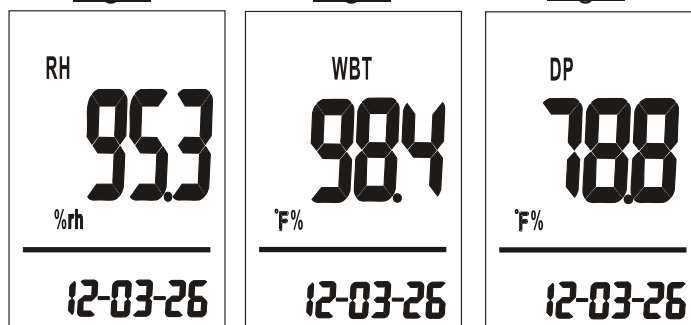


Fig.5

Fig.6

Fig.7

### DATA HOLD




Press “” to freeze the readings.  
**HOLD** Icon is displayed on the right top of the LCD (Fig. 8). All current readings are kept unchanged. Press “” again to cancel the hold function.



Fig.8

### MIN/MAX/AVG/CURRENT REVIEW

This meter allows you to check the minimum, maximum, average and current value from the moment you press the “” key.



Each press of “”, it displays MIN, MAX, AVG & current value in sequence. (Fig.9~12). To return to normal mode, press  key to escape.



Fig.9



Fig.10



Fig.11



Fig.12

In this max/min/avg/current review mode, it shows the corresponding readings on main display and the **accumulated time** of how long you are in this mode.

In this mode, press “MODE” to switch the displayed parameters. Fig 13.

The displayed sequence in this mode is min→max→AVG→current reading→min→→max.....Press “ $\frac{\text{START}}{\text{ESC}}$ ” key can leave this mode and return to normal.

Distinguishing the normal display and current review by checking the time display format. In normal display, the date & time displayed in turns. In current review, the time display is the **accumulated time** of how long you are in this max/min mode.

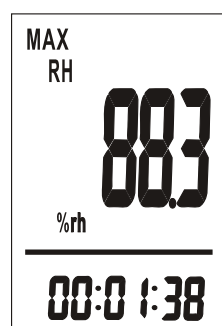


Fig.13

#### NOTE:

“HOLD” & “MANUALLY RECORD” & “RECALL” FUNCTION ARE DISABLE IN MIN/MAX/AVG MODE.

## MANUALLY RECORDING

The meter features 99 point memories. In normal mode, Press “  $\frac{\text{MEMO}}{\text{RECALL}}$  ” to record, **REC** icon and main display flash for about 2 seconds. The main display shows the memory serial number, at most 99 points. (Fig. 14)

Each memory contains all parameters (Velocity, TA.....%rh), not only the Parameter you choose to see on main display.

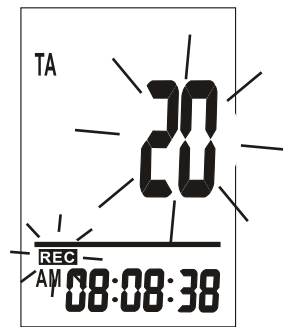


Fig.14

Manually recording function is disabled in min/max & HOLD mode.

## 99 MEMORIES RECALL

The meter features 99 point memories review function.

In normal mode, press “  $\frac{\text{MEMO}}{\text{RECALL}}$  ” for more than 2 seconds until **Recall** icon appear.

Press  $\frac{\text{HOLD}}{\blacktriangle}$  or  $\frac{\text{LW-D-A}}{\blacktriangledown}$  to scroll the memories. The memory serial number displays on main LCD first and reading comes after. (Fig. 15&16)

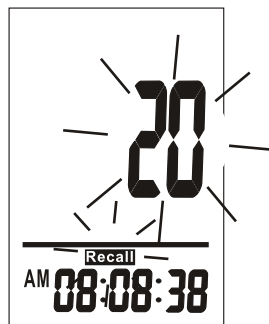


Fig.15



Fig.16

Press “ MODE ” to switch the display parameter.(Fig.17)

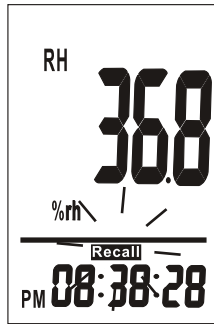
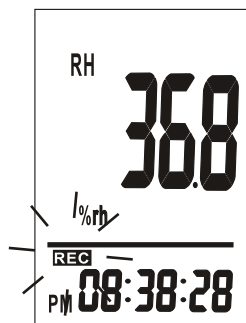


Fig.17

The time displayed in memory recall mode is the recording time of this memory. To leave the recall mode, press “  $\frac{\text{START}}{\text{ESC}}$  ” to quit.

### DATA LOGGING

The meter can automatically record readings of velocity/volume/TEMP./RH/DP temp./WB temp. for long time monitoring. The memory capacity is 12000points. Users can set up sampling rate from 1 second to 4hours 59 minutes and 59 seconds (See SETUP P10). After sampling rate is selected, press “  $\frac{\text{START}}{\text{ESC}}$  ” for 2 seconds under normal mode to start logging. The **REC** icon flashes to indicate the logging status and LCD main display shows the real time value. Lower displays are the real time clock.(Fig.18)



To terminate data logging, press “  $\frac{\text{START}}{\text{ESC}}$  ” for 2 sec, **REC** icon stops flashing

Fig.18

While press  $\frac{\text{START}}{\text{ESC}}$  to start the logging again, the previous logging records are overwrite.

Press **MODE** key to switch to the mode you want to see. Except the mode switch function, min/max, manual record, hold and recall functions are all disabled during logging.

## AREA SIZE

While in normal mode, press “MODE” to switch to air volume mode. When in air volume mode, press “ $\frac{LW-D-A}{\nabla}$ ” to setup the outlet area size. Three calculations available. Press “ $\frac{LW-D-A}{\nabla}$ ” to choose the preferred calculation. L\*W, Diameter & Area are displayed in turns. (Fig.19~21)



Fig.19

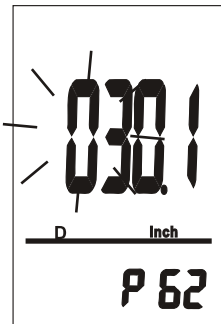


Fig.20

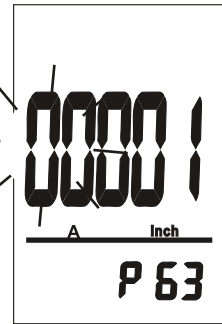


Fig.21

While choose L\*W, setup L(length) first. Only press “ $\frac{HOLD}{\blacktriangle}$ ” to adjust and press “ $\frac{AVG}{Mx/Mn}$ ” to confirm. After confirming the L value, only press “ $\frac{AVG}{Mx/Mn}$ ” to setup W (width). Same as above to adjust and confirm the value.





While choose D (diameter) or A(area), only press “ $\frac{HOLD}{\blacktriangle}$ ” to adjust and press “ $\frac{AVG}{Mx/Mn}$ ” to confirm.

	L/W/D	AREA
cm	000.0~999.9	00000~99999
inch	000.0~999.9	00000~99999

## LOW BATTERY

Battery indicator “**B**” will display on LCD while battery power is low. Suggest to change the batteries.

## SETUP

When the meter is off, hold down  SET for more than 2 sec to enter setup mode. Press "HOLD"  or "LW-D-A"  to select and press "AVG Mx/Mn"  to enter.

To exit setup, press START ESC in P10 ~ P50 and it returns to normal mode.

### P10: LOGGING SAMPLING RATE

Go into P10 for setting sampling rate of data logging (Fig.22). The range is from 1 second to 4 hours 59 minutes and 59 seconds.







Press "AVG Mx/Mn"  and it goes into setting with blinking Hour digits on the lower display. To change the digit, press "HOLD"  to increase and "LW-D-A"  to decrease. Press "AVG Mx/Mn"  to confirm and enter Minute setting. Press "AVG Mx/Mn"  again to confirm and enter Second setting (Fig.23). Press "AVG Mx/Mn"  to confirm the rate setting or "START ESC" without saving and return to P10.








Fig.22



Fig.23

### P20: 99 MEMORIES CLEAR

Press "HOLD"  to select CLr P20 when it is needed to clear the memories. (Fig.24) Press "AVG Mx/Mn"  to go into P21 and decide to clear or keep all the manual records. The current set will be blinking on LCD (Fig.25).

Press HOLD  or LW-D-A  to choose NO or YES and press "AVG Mx/Mn"  to confirm.

Press START ESC to escape and return to P20.

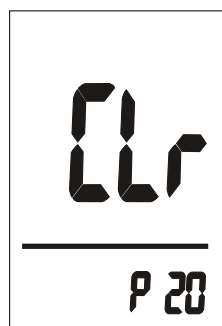


Fig.24

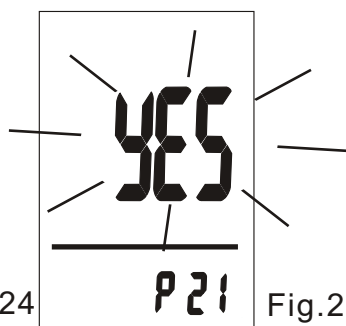


Fig.25

### P30 UNIT

Select unit P30 to setup temp. & length unit (Fig.26). Press “ $\frac{AVG}{Mx/Mn}$ ” to go into P31 and decide the unit as metric ( $^{\circ}C$  & M) or imperial( $^{\circ}F$  & Ft). The current set will display on LCD(Fig.27).

Press “ $\frac{HOLD}{\blacktriangle}$ ” or “ $\frac{LW-DA}{\blacktriangledown}$ ” to choose metric or imperial. Press “ $\frac{AVG}{Mx/Mn}$ ” to confirm or press “ $\frac{START}{ESC}$ ” to leave without saving.



Fig.26

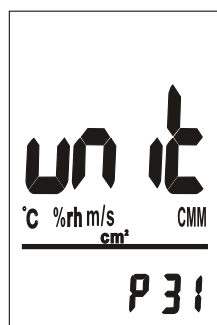


Fig.27

### P40:REAL TIME CLOCK

Go into P40 for setting the real time clock of this meter.

Press “ $\frac{AVG}{Mx/Mn}$ ” and it goes into P41 to set the time format as 12hour or 24 hour.

The current set will flash on LCD. Press “ $\frac{HOLD}{\blacktriangle}$ ” or “ $\frac{LW-DA}{\blacktriangledown}$ ” to change the format and press “ $\frac{AVG}{Mx/Mn}$ ” to confirm and entering real time clock setting.(Fig.28)

The blinking Year digits on the lower display. To change the digit, press “ $\frac{HOLD}{\blacktriangle}$ ” or “ $\frac{LW-DA}{\blacktriangledown}$ ” to adjust. Press “ $\frac{AVG}{Mx/Mn}$ ” to confirm and enter Month setting. Repeat above steps to complete the month/date/hour/minute/second setting.(Fig.29)

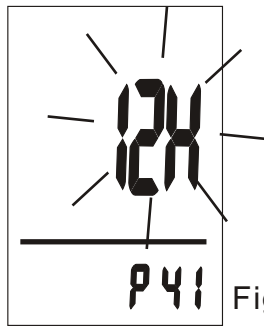


Fig.28

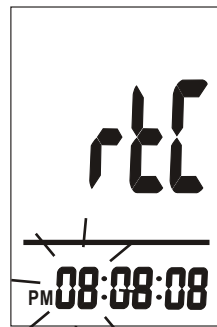


Fig.29

## P50:HUMIDITY OFFSET

Go into P50 for minor offset the humidity reading(Fig 30).

Press “ $\overline{\text{AVG Mx/Mn}}$ ” and it goes into P51. The current set will flash on LCD. Press “ $\overline{\text{HOLD}}$ ” or “ $\overline{\text{LW-D-A}}$ ” to change the value and press “ $\overline{\text{AVG Mx/Mn}}$ ” to confirm(Fig 31).

The adjustable range are -5.0~+5.0 %rh

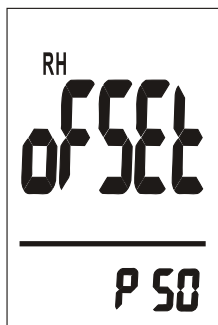


Fig.30

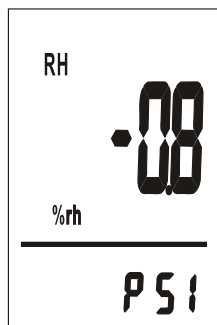


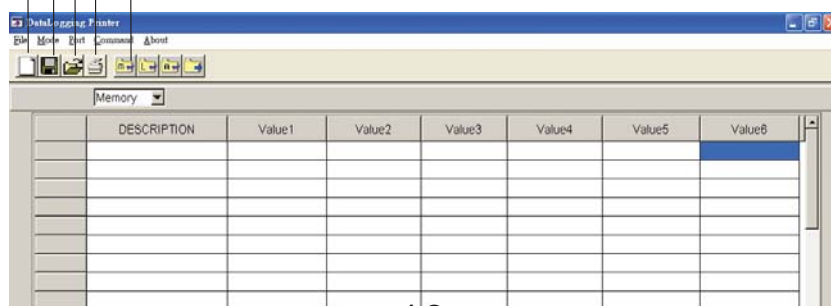
Fig.31

## PC DOWNLOAD SOFTWARE

USB cable & software CD are enclosed as standard accessory. To successfully install the software, be sure to run the USB driver. To use download function, meter must in “**PC download mode**”. While meter is off, press “ $\overline{\text{SET}}$ ” + “ $\overline{\text{LW-D-A}}$ ” more than 2 seconds until “PC” appears on LCD.

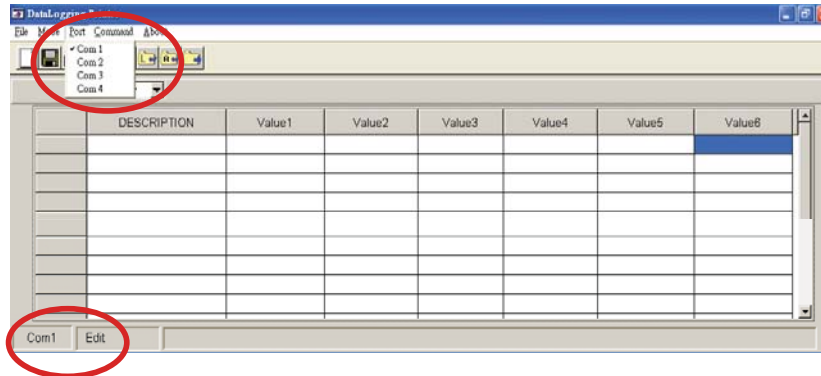
Save Print

New Load Memory



## PORT

- Select the correct Com. port to ensure the meter is communicated with PC. "PC" will appear on the LCD and "COM #" will show on the left bottom corner of screen.
- There are 16 COM ports for selection in this software.

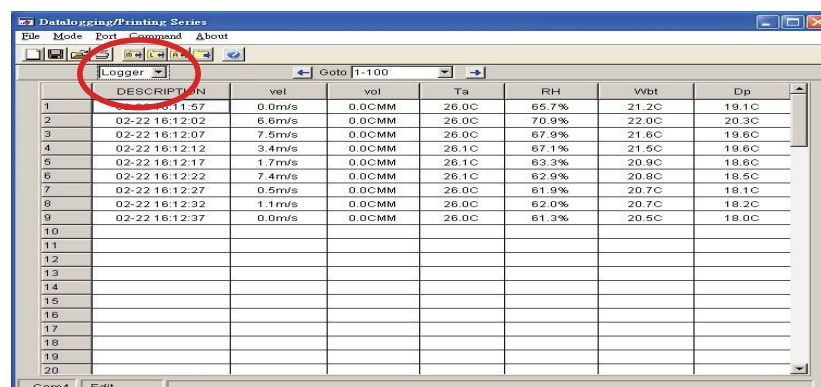
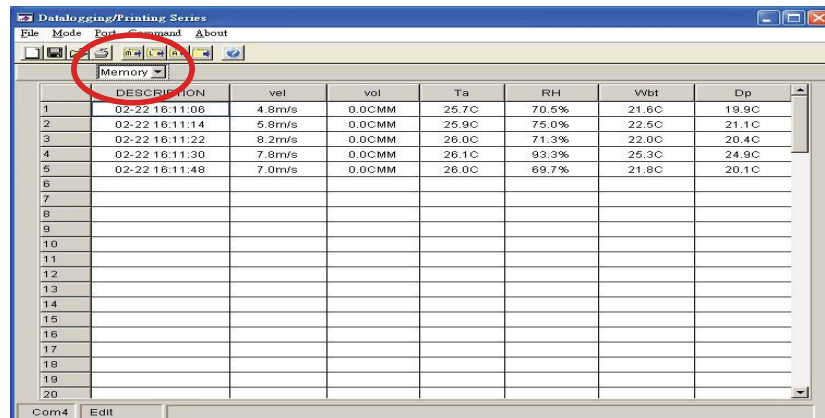


## DOWNLOAD

- Choose "Download all data" from "Comm -and" to transfer data from meter to PC".

Choose "Logger" or "Memory" to see

- auto logging data or manually record data.





## TROUBLESHOOTING

### 1. Power on but no display

- a) Make sure the time of pressing key is more than 0.1 second.
- b) Check the batteries are in place and in good contact with correct polarity.
- c) Replace a new battery and try again.
- d) Move away the battery for one minute and put back again. Try again.

### 2. Display disappear

- a) Check whether the low battery indicator displayed before Display disappear, if yes, replace a new battery.
- b) Turn on the meter by pressing  +  key to disable auto power off function for long time using.

### 3. E 2

- a) The value is underflow.

### 4. E 3

- a) The value is overflow.

### 5. E4

- a) The original data that is relative to this value error.

### 6. E31

- a) Temp. related circuit error.

### 7. E32

- a) memory IC error.

### 8. E33

- a) Humidity related circuit error.

## SPECIFICATION

Model	89053
PC interface	YES
Backlight	YES
Wind speed range	0.5~20M/S
Wind speed accuracy	+/- (3% of reading+0.2m/s)
Air temp. range	-20~60.0°C
Air temp. resolution	0.1°C/°F
Air temp. accuracy	+/-0.6°C (-20~50°C); +/-1.2°C at others
Air RH% range	0.1%RH~99.9%RH
Air RH% resolution	0.1%RH
Air RH% accuracy	+/-3%RH(at 25°C, 10~90%RH, others +/-5%RH)
Wet Bulb temp. Range	-20~59.9°C
Wet Bulb temp. Resolution	0.1°C/°F
Air volume display	0 to 99999m <sup>3</sup> /minute
Air volume resolution	0.1(0 to 9999.9) or 1 (10000 to 99999)
LCD size (mm, HxW)	54(H)x37(W)mm
Operating temp.	0~50°C
Operating RH%	Humidity < 80%
Storage temp.	-10~50°C
Storage RH%	Humidity < 90%
Dimension(mm,LxWxT)	180x58x24.5
Weight	~200g
Battery	AAA battery x4pcs
Standard Package	Meter, External vane probe, Battery, Manual, Software kit, hard carry case
Optional Accessory	External vane probe

## **RETURN AUTHORIZATION**

Authorization must be obtained from the supplier before returning items for any reason. When requiring a RA (Return Authorization) , please include data regarding the defective reason, the meters are returned along with good packing to prevent any damage in shipment and insured against possible damage or loss.

## **WARRANTY**

The meter is warranted to be free from defects in material and workmanship for a period of one year from the date of purchase. This warranty covers normal operation and does not cover battery, misuse, abuse, alteration, tampering, neglect, improper maintenance or damage resulting from leaking batteries. Proof of purchase is required for warranty repairs. Warranty is void if the meter has been opened .

## **Accuracy, the Zenith of Measuring / Testing Instruments !**

Hygrometer/Psychrometer

Thermometer

Anemometer

Sound Level Meter

Air Flow meter

Infrared Thermometer

K type Thermometer

K.J.T. type Thermometer

K.J.T.R.S.E. type Thermometer

pH Meter

Conductivity Meter

T.D.S. Meter

D.O. Meter

Saccharimeter

Manometer

Tacho Meter

Lux / Light Meter

Moisture Meter

Data logger

Temp./RH transmitter

Wireless Transmitter .....

**More products available !**

2014.11 V01