

# SENTRY

## SENTRY®

SENTRY OPTRONICS CORP.

# Anemometer ST730S



## Instruction Manual



# 730S

# Anemometer

Instruction Manual

使用說明書



RoHS



REACH  
(SVHC)

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# 1. Product Introduction

Thank you for purchasing this Anemometer. The Anemometer is an air velocity and temperature of air measuring instrument. To measure an air velocity, put sensor head face to the air velocity value.

## 1-1 Features

- Combination of hot wire and standard thermister, deliver rapid and precise measurement event at low air velocity.
- Wide range measurement of air velocity, fast response time.
- Multi-function for air velocity measurement: m/s, km/h, ft/min, mile/h.
- Super large LCD with dual function display, read the air velocity & temperature at the same time.
- Data hold and record / recall maximum, minimum, and average reading.
- Ultra low power consumption in shutdown mode.
- Auto power off after 10 Minutes of idle.

## 1-2 Applications

- Air conditioner
- Refrigerated case
- Ventilation system
- Furnace flow velocity
- Fans / motors / blowers
- Environmental testing
- Manufacturing processes of semiconductor technology

## 2. Safety Information

Read the following safety information carefully before attempting to operate or service the meter. Only qualified personal should perform repairs or servicing not covered in this manual.

### 2-1 Cautions!

- DO NOT submerge the unit in water.
- This product is not designed for use in medical evaluation. The product can only be used to measure body temperature simply for reference. They are meant for industrial and scientific purpose.

## 2-2 Safety symbols



Dangerous, refer to this manual before using the meter.



CE Certification

This instrument conforms to the following standards:

**En61326:** Electrical equipment for measurement, control and laboratory use.

**IEC61000-4-2:** Electrostatic discharge immunity test.

**IEC61000-4-3:** Radiated, radio-frequency, electromagnetic field immunity test.

**IEC61000-4-8:** Power frequency magnetic field immunity test.

Tests were conducted using a frequency range of 80-1000 MHz with the instrument in three orientations. The average error for the three orientations is  $\pm 0.5^{\circ}\text{C}$  ( $\pm 1.0^{\circ}\text{F}$ ) at 3V/m throughout the spectrum. However, between 781-1000MHz at 3V/m, the instrument may not meet its stated accuracy.

**RoHS** Restrict to use of six substances within electrical and electronic equipment (EEE), thereby contribution to the protection of human health and the environment.



The device may not be disposed in trash. It promotes the re-use recycling and other forms of recovery of used materials and component, and to improve the environmental performance of all operators (manufacturers, traders and treatment facilities) involved in the life cycle of products. Dispose of the product appropriately in accordance with the regulations in force in your country.

**REACH**

**(SVHC)** The device of used materials content no substances that list of proposed REACH substances of very high concern.

# 3. Specification

## 3-1 General Specification

|                   |  |
|-------------------|--|
| Model             | 730S   |
| Measurement       | Air Velocity : m/s, ft/min, km/h, mile/h, knots<br>Temperature: °C and °F                        |
| Sensors           | Air Velocity / Air Flow Sensor : Hot Wire  |
| Operating Temp.   | 32~122°F (0~50°C), 10~90%RH  |
| Storage Temp.     | -14~140°F (-10~60°C)   |
| Record Function   | Yes (9 points)   |
| Sample Time       | Approx. 0.5 sec.   |
| AC Power          | YES  |
| Multi-LCD Display | YES  |
| Max / Min / Avg   | YES  |
| LCD Backlight     | YES  |
| Data Hold         | YES  |
| Auto Power Off    | 10 Minutes of idle<br>(30 Minutes with AC Power)   |
| Dimensions        | 7.24"×2.75"×1.57" (184×70×40mm)<br>Telescope probe : approx. 70.8"<br>(1800mm) include wire rod. |
| Weight            | Approx. 12.8oz (363g) with battery   |
| Accessories       | 9Vbattery, Instruction manual, Carrying case, AC Input, USB Transmission line.                   |

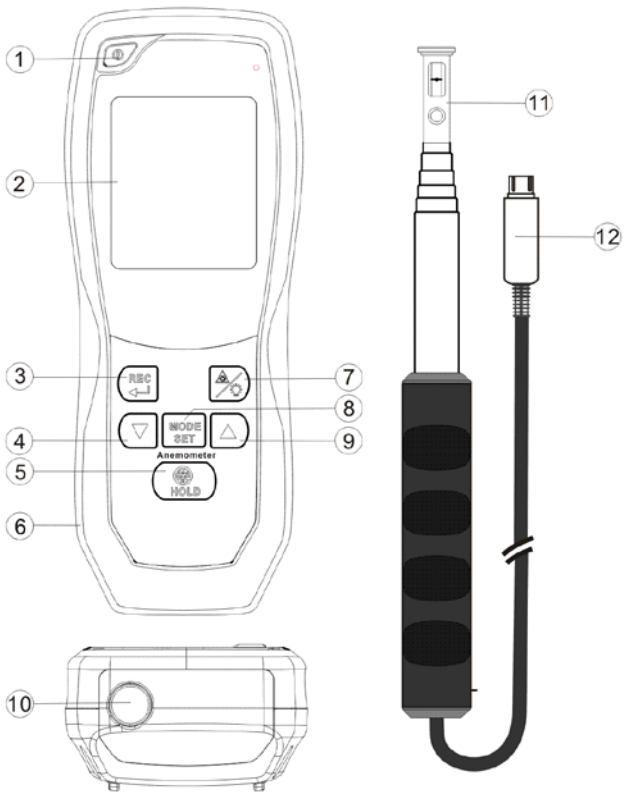


## 3-2 Technical Specification

|                        |   |
|------------------------|---|
| Model                  | 730S  |
| Range                  | Air Velocity:<br>0~40m/s, 0~7,874ft/min, 0~144km/h,<br>0~89.5mile/h,0~77.75knots<br>Air Temperature: 32~158°F (0~70°C)  |
| Resolution             | Air Velocity:<br>0.01m/s, 0.1ft/min, 0.01km/h, 0.01mile/h<br>0.01knots<br>Air Temperature: 0.1°F(0.1°C)   |
| Accuracy<br>(%reading) | Air Velocity:<br>$\pm(0.03+3\%)m/s$ , $\pm(5.9+3\%)ft/min$ ,<br>$\pm(0.11+3\%)km/h$ , $\pm(0.07+3\%)mile/h$ ,<br>$\pm(0.06+3\%)knots$<br>Air Temperature: $\pm 1.5^{\circ}F$ ( $0.8^{\circ}C$ ) |

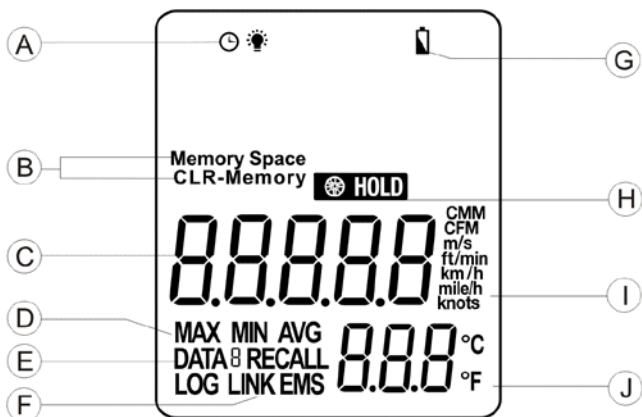
# 4. General Descriptions

## 4-1 Unit Diagram




- 
- |                    |                     |
|--------------------|---------------------|
| ① Power Button     | ⑧ Mode (SET) Button |
| ② LCD Screen       | ⑨ ▲ Up Button       |
| ③ REC (↵) Button   | ⑩ Probe Socket      |
| ④ ▼ Down Button    | ⑪ Sensor Head       |
| ⑤ Hold Button      | ⑫ Probe Plug        |
| ⑥ AC Input         |                     |
| ⑦ Backlight Button |                     |

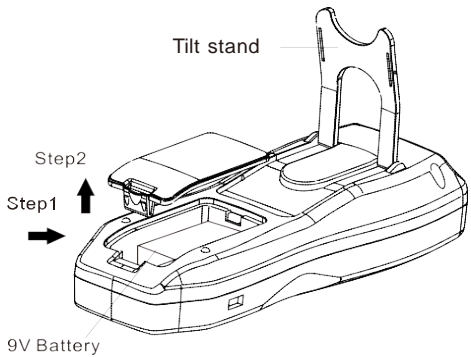
## 4-2 LCD Panel



- (A) Time Interval / Backlight
- (B) Memory Space / Clear Memory
- (C) Primary Reading
- (D) MAX / MIN / AVG
- (E) DATA Record / Recall / Log
- (F) PC Link / EMS
- (G) Low Battery
- (H) Anemometer Hold
- (I) Anemometer Unit
- (J) Tertiary Reading

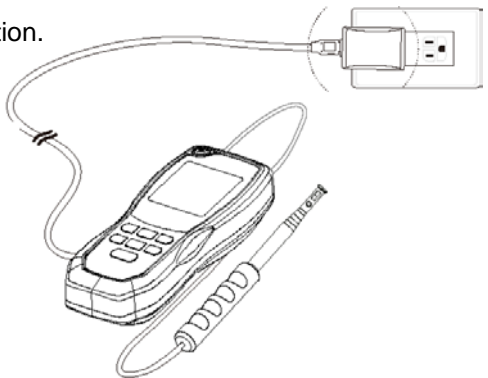
## 4-3 Battery Placement

The meter is powered by a 9V battery. When  symbol appear, the battery voltage drops below the level for reliable operation, the user has to replace a new battery. To change the battery, open the battery cover on the back and replace the battery in the battery compartment. Make sure the cover is well snapped after the replacement of battery.



## 4-4 AC Power

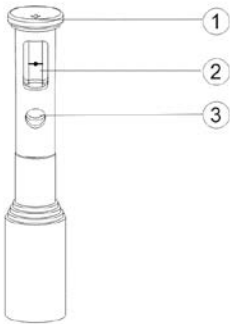
Except battery power supply, the unit also consumes AC power via USB cable: Plug the AC adapter to the wall jack Option.



## 4-5 Sensor Tip Description

- Sensor Head:

Measurement



Not in Use



- ① Air Direction Arrow
- ② Air Velocity Sensor  
(Do not touch!)
- ③ Temperature Sensor

To protect the sensors, please telescope the sensor head into the wand when the meter is not in use.

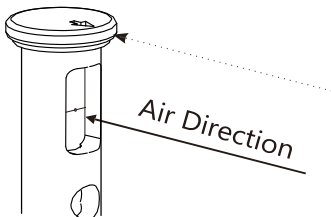


**Warning!** Do not touch the air velocity or temperature thermistor inside the sensor head.

Air Velocity Measurement:

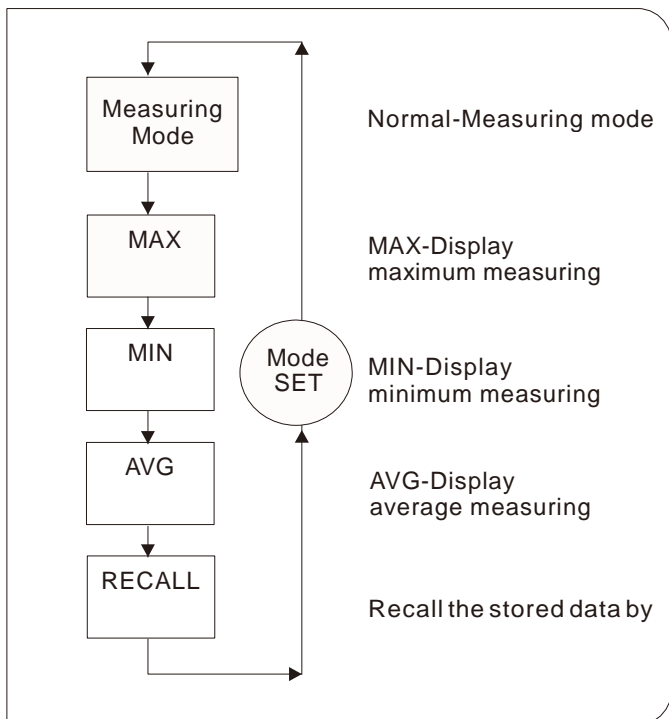
Place the sensor in the air current to be measured.

Have the air flow meet the sensor head in the direction toward the arrow.



## 5. Mode Function

It is easy to operate more measurement functions by using "MODE SET" button to change. The sequential operations and explanations are shown in the following flow-chart



## 5-1 Air Velocity /

### Air Temperature Measurement

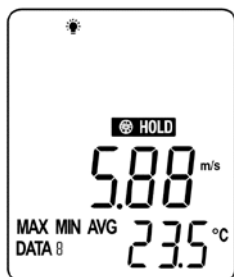


Place the sensor in the air stream. It will show the air velocity value on the primary reading and show the air temperature value on the tertiary reading. During

Measuring, press the "HOLD" button once to hold the air velocity value and the "HOLD" symbol will appear on the LCD. Press the button again

to return to normal operation.

## 5-2 Maximum / Minimum / Average Measurement



In measuring mode, press the "MODE SET" button to toggle the "MAX/MIN/AVG" mode and measure a target, it will show the MAX/ MIN/AVG value on the primary reading.


During measuring, press the "HOLD" button once to hold the measured value and the "HOLD" symbol will appear on the LCD. Press the button again to return to normal operation and the Max / MIN/AVG value will reset.

## 5-3 Data Record / Recall







### Data Record:

The data can be recorded in the measuring mode function.

Just press “” button once, the value on the primary, and tertiary readings will be recorded in DATA# and

automatically point to next address DATA#+1.

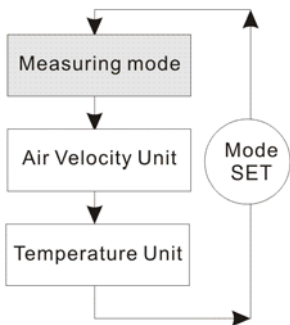
### Data Recall:

Press “” button to select the recall mode and “**RECALL**” Symbol will appear on the LCD. Press “” or “” button to recall the stored data. At the **DATA0**, press “” button to clear the DATA1 to DATA9.



## 6. Advanced Set Functions

Press the “MODE SET” button and hold for 3 seconds into the advanced set function, the “SET” Symbol will appear on the tertiary reading. Repeat to press the “MODE SET” button and hold for 3 seconds again or idle for 6 seconds to exit this function. In the set function, press the “▲” or “▼” button to adjust, press the “MODE SET” button to set and automatically toggle to next options. The sequential operation and explanations are shown in the following flow chat.




### 6-1 Air velocity Unit Setting

Press the “▲” or “▼” button to select the air velocity unit. The unit symbol will flash on the LCD.

### 6-2 Temperature Setting

Press the “▲” or “▼” button to select the °C or °F unit. The unit symbol will flash on the LCD.

### 6-3 Backlight ON/OFF

Press the “” button to turn the backlight on and off.

# 730S

# Anemometer

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RoHS



REACH  
(SVHC)

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# 1. 產品簡介

感謝你購買本熱線式風速儀。此儀器使用高精密熱線絲感測器來量測風速。此儀器在操作上也非常容易，只要將感測頭(位於探棒前端)的受風面，面項待測的氣流。在主顯示區就會立即出現風速讀值。

## 1-1 產品特色

- 結合熱線絲感測器與標準熱敏電阻，可迅速且精確測量極低風速。
- 同時擁有快速反應及大範圍風速量測。
- 可切換多樣風速單位:m/s, km/h, ft/min, mile/h
- 超大液晶螢幕及多重顯示可同時讀取風速及風溫
- 資料鎖定與計錄/資料讀取及最大值、最小值、平均值。
- 閒置 10 分鐘自動關機(外接電源時 30 分鐘)

## 1-2 適用範圍

- 空調系統
- 冷凍櫃
- 通風系統
- 鍋爐風速
- 風扇/馬達/鼓風機
- 環境測試
- 半導體科技製造


## 2. 安全需知


使用本產品前，請務必先閱讀使用說明書及注意事項。並且，只有合格認證工程師才可對本產品進行保養或維修。

### 2-1 注意事項

- 請勿將本產品浸泡在水中。
- 本產品並非醫療用品，因此相關醫療方面的量測僅供參考。

### 2-2 安全標準

 危險！ 在使用產品前，請先詳閱使用者手冊。

 CE 認證

本儀器符合下列標準：

EN61326：實驗室量測或控制設備電磁相容檢測。

IEC61000-4-2：靜電放電耐受檢測。

IEC61000-4-3：輻射耐受檢測。

IEC61000-4-8：電源頻率磁場耐受檢測。

當外來電磁波頻率在 781~1000MHz 附近且強度達到 3V/m 時，儀器可能無法達到產品所要求的精度。

**RoHS** 規範電器電子儀器(EEE)產品所禁用的 6 種物質，以確保人體健康及環境安全。

**REACH(SVHC)** 本產品使用材料，符合 REACH 規範。



為了保護地球，請勿將此產品與一般的垃圾一同處理，請依照該國環境保護的規定丟棄或處理。

### 3. 規格

#### 3-1 一般規格

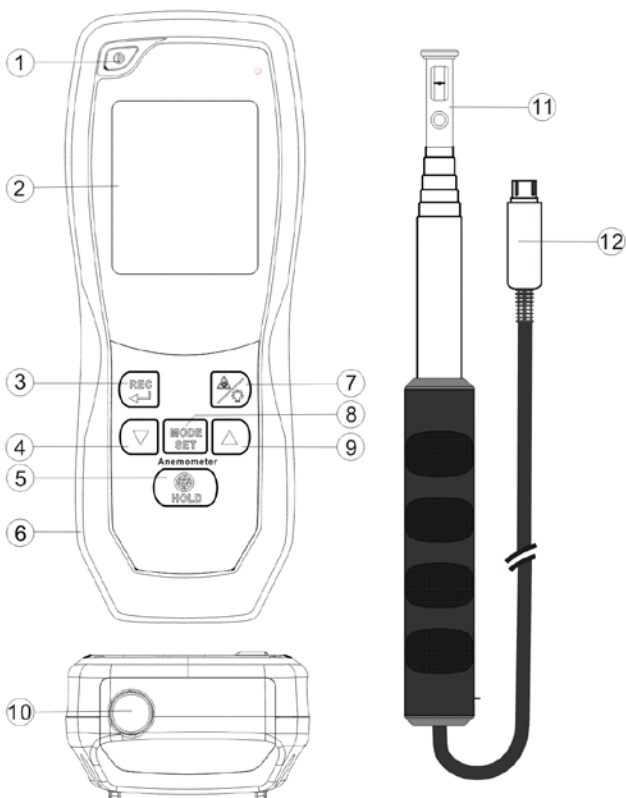
|                |  |
|----------------|--|
| 型號             | 730S   |
| 量測值            | 風速：m/s, ft/min, km/h, mile/h, knots<br>溫度：°C 和 °F              |
| 感測器            | 風速感測器：熱絲線<br>風溫感測器：熱敏電阻  |
| 操作溫度           | 0~50°C (32~122°F), 10~90%RH                                    |
| 儲存溫度           | -10~60°C (14~140°F)  |
| 手動記憶           | 9 筆  |
| 反應時間           | 大約 0.5 秒   |
| 0 外部電源         | 有  |
| 多重顯示           | 有  |
| 最大/最小/<br>平均讀值 | 有  |
| 螢幕背光           | 有  |
| 資料鎖定           | 有  |
| 自動關機           | 閒置 10 分鐘關機(外接電源 30 分鐘)   |
| 尺寸             | 184x70x40 毫米 (7.24x2.75x1.57 英吋)<br>探棒: 含線長約 1800 毫米 (70.8 英吋) |
| 重量             | 大約 363 公克 (12.8 盎司)含電池   |
| 基本配件           | 9V 電池、使用者手冊、手提箱、外接變壓器、USB 傳輸線                                  |

## 3-2 技術規格

| 型號   | 730S  |
|------|---|
| 量測範圍 | 風速:<br>0~40m/s, 0~7,874ft/min,<br>0~144km/h, 0~89.5/h, 0~77.75knots<br><br>風溫:0~70°C (32~158°F)                                   |
| 解析度  | 風速:<br>0.01m/s, 0.1ft/min, 0.01km/h, 0.01mile/h,<br>0.01knots<br><br>風溫:0.1°C (0.1°F)   |
| 精確度  | 風速:<br>±(0.03m/s+讀值 3%), ±(5.9ft/min+讀值 3%)<br>±(0.11km/h+讀值 3%), ±(0.06+3%)knots<br>±(0.07mile/h+讀值 3%)<br><br>風溫:±0.8°C (1.5°F) |

## 4. 操作方式

### 4-1 結構名稱說明



① 電源開關

② 液晶螢幕

③ 記憶/輸入確認按鍵

④ 向下按鍵

⑤ 風速鎖定按鍵

⑥ 外接電源接孔

⑦ 背光開關

⑧ 模式/設定按鍵

⑨ 向上按鍵

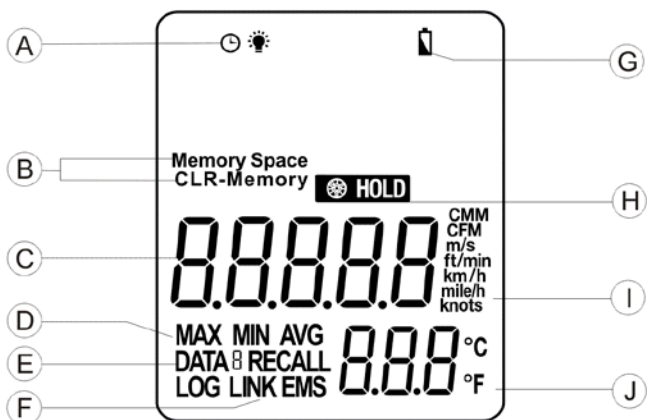
⑩ 探棒連接孔

⑪ 感測頭

⑫ 探棒接頭



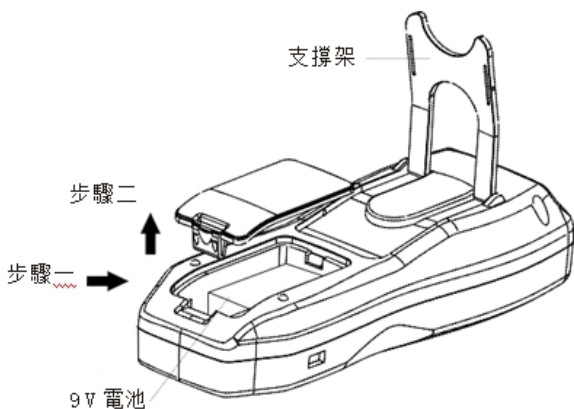
## 4-2 液晶面板說明



- Ⓐ 時間/背光符號
- Ⓑ 記憶容量/記憶清除符號
- Ⓒ 主顯示區
- Ⓓ 最大值/最小值/平均值符號
- Ⓔ 記憶組數/讀取/長時間記憶符號
- Ⓕ 電腦連結符號
- Ⓖ 低電量顯示符號
- Ⓗ 風速鎖定符號
- Ⓘ 風速單位符號
- ⓵ 第三顯示區及單位符號

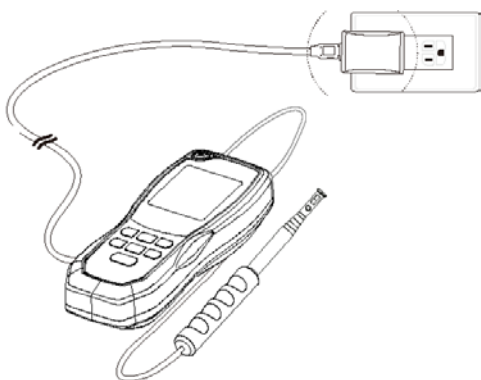
## 4-3 電池更換

本儀器使用 9V 電池，當電量將用盡時，液晶顯示螢幕會出現低電量符號，以提醒您更換電池。請依步驟打開電池蓋更換新電池。



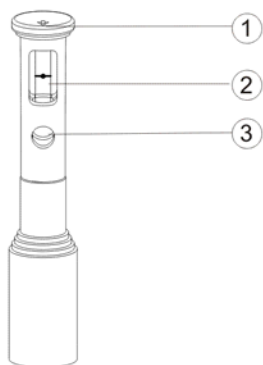
## 4-4 外部電源

本儀器可使用外部變壓器供電，如圖所示。



## 4-5 感測頭說明

量測時



不用時



量測時

- ① 受風面指示箭頭
- ② 風速感測器(請勿碰觸!)
- ③ 風溫感測器(請勿碰觸!)

為保護感測器，當儀器不使用時，請將感測頭收入伸鎖桿內。



警告！嚴禁碰觸感測頭內的風速或風溫感測

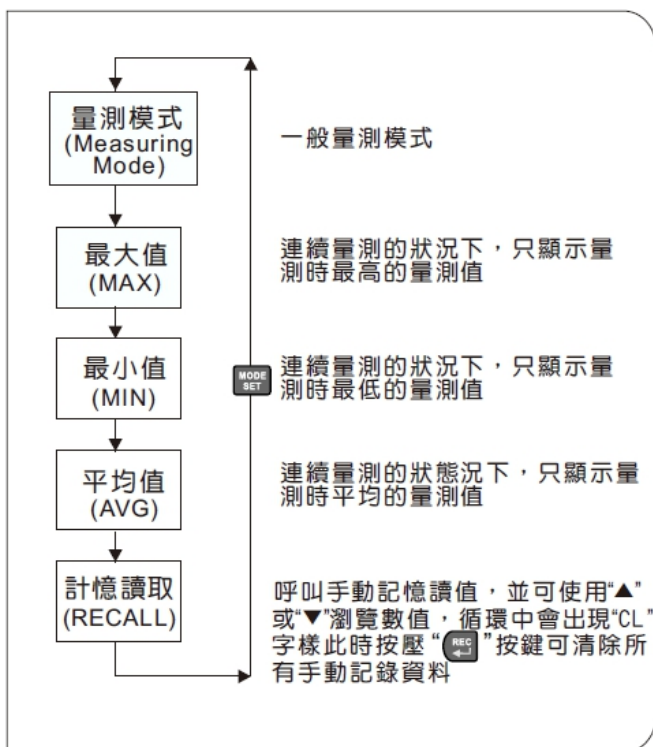
風速量測：請注意，須將感測器開口面垂直於待測氣流方向，也就是將受風面指示箭頭正對氣流方向。





## 5. 模式設定

只要按壓背版的“MODE SET”按鍵，即可進入量測模式設定。本儀器採循環切換操作模式，因此再一次按壓“MODE SET”按鍵，即可進入到下一個操作模式。

### 量測模式






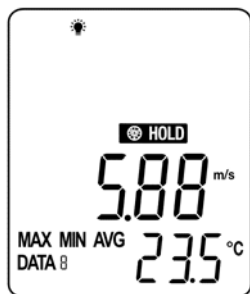
## 5-1 風速/風溫量測

- 將感測器放置於待測氣流路徑，並將受風面指示箭頭面對氣流方向。此時，風速資料會立即顯示在主顯示區，且風溫資料同時顯示在第三顯示區。再量測的過程，按壓“”按鍵一次，就可以鎖定風速與風溫資料並顯示在螢幕(風速鎖定符號“ HOLD”同時也會顯示)。再按壓按鍵一次就可以回歸正常量測。



## 5-2 最大值/最小值/平均值量測

- 在量測模式下按壓“”按鍵切換。”最大值(最小值/平均值)”的風速讀值會顯示在主顯示區。在量測的過程中按壓“”按鍵一次，就可以鎖定量測值並顯示在螢幕上(風速鎖定符號“ HOLD”同時也會顯示)。再按壓按鍵一次就可以回歸正常量測並重置最大值(最小值/平均值)。



## 5-3 手動資料紀錄/讀取



- 手動資料紀錄:

再量測模式下資料可以進行記錄。只要按壓




“” 按鍵一次。所有顯示區的資料將被記錄到 DATA# 所顯示的位置且資料儲存的位置會自動跳到下一筆(DATA#+1)。



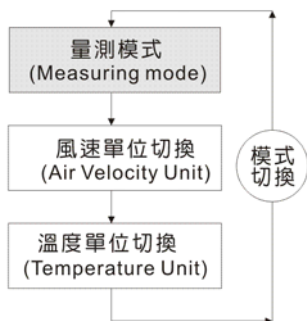
- 手動資料讀取:

按壓 “” 按鍵到資料讀取模式(此時螢幕會顯示” RECALL” 符號)按壓” ▲” 或” ▼” 按鍵就可以呼叫不同位置的儲存資料。當切換到 DATA0 的時候按壓 “” 就可以清除 DATA1~DATA9 的資料。

## 6. 進階設定功能

按壓“”按鍵 3 秒就可進入進階設定功能(以下簡稱設定功能，此時螢幕會顯示”SET”字樣於第三顯示區)。再按壓“”3 秒或是閒置 6 秒即可離開此設定功能。在設定功能下，按壓”▲”或”▼”按鍵進行功能調整，或按壓“”去切換下一個設定功能。切換順序說明可參考下列流程圖。

進階設定功能



### 6-1 風速單位切換

按壓”▲”或”▼”按鍵選擇風速單位(此時螢幕會閃動選擇的單位)

### 6-2 溫度單位切換

按壓”▲”或”▼”按鍵選擇溫度單位(此時螢幕會閃動選擇的單位)

### 6-3 背光開關

按壓“”按鍵切換背光的開關。











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