

# OPERATION MANUAL

## POCKET SIZE TYPE DIGITAL HYGRO-THERMOMETER



CE

8701

8703

8705



CM880



LAM880D



SAM880DW

## INTRODUCTION

Congratulations on your purchase of the Hygro-Thermometer ! This unique instrument is portable, battery operated in Temperature./Relative Humidity/Dew Point / Wet Bulb temperature in a compact measuring device. There are 3 models available for selection.

The Hygrometer is ideal for HVAC/R technicians measuring Temperature , Humidity, Though you might have seen Dew Point or Wet Bulb .. these are not available for model 8701, and Wet bulb function is only available for model 8705. Please contact the store or the place you purchased .

### Features :

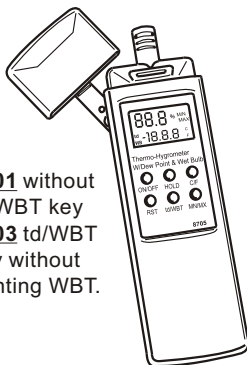
- **Dual LCD** digital display .
- **Data Hold** to capture readings.
- **Pocket size** , easy to fit in pocket.
- **Low** battery indication.
- **Fast** response .
- **Accurate** reading .
- **Maximum** record function .
- **Minimum** record function.
- **Dew Point** calculated in seconds.  
(model 8703,8705 only)
- **Wet bulb** calculated in seconds.  
(model 8705 only) Calculate WB, no water , twirling or conversion chart / reading chart needed.
- **Microprocessor** circuitry for reliability.

Model	8701	8703	8705
Temp/RH	V	V	V
Dew Point		V	V
Wet Bulb			V

## CONTROLS AND INDICATORS



1. Primary Data Screen displays pressure value.
2. "-" .Minus pressure display.
3. **MAX** Maximum recorded.
4. **MIN** Minimum recorded.
5. **HLD** Hold current reading.
6. **td** Dew Point measurement.
7. **WB** Wet Bulb temperature measurement .
8. **C** Celsuis unit
9. **F** Farenheit unit
10. **%** Relative humidity unit



**8701** without  
td/WBT key

**8703** td/WBT  
key without  
printing WBT.

## AUTO POWER OFF (SLEEP FUNCTION)

Unit will turn itself off after 20 minutes (Sleep mode) To override Auto Power Off function (Non-Sleep Mode) press **ON/OFF** and **MIN/MAX** button simultaneously. After the full display appears release **ON/OFF** button first, the display will show "n" in left side. When "n" appears (See Fig.A) then release **MIN/MAX** button. Unit will now be in Non-Sleep Mode.

Fig. A →



## MODE OPTIONS

- (1) Remove protective sensor cover.
- (2) Turn meter on by pressing **ON/OFF** button.(See Fig.B)
- (3) Press **C/F** key to convert reading to desired range. Both temperature and relative humidity measurement will display simultaneously.(See Fig.C)

Fig. B →

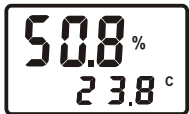
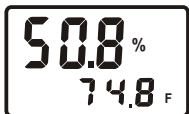


Fig. C →



## DATA HOLE FUNCTION

Press "**HOLD**" button until (**HLD**) appears in display.

The current reading is now being held and will not change until Hold function is cancelled. (See Fig.D)

Press "**RST**" button to cancel Hold function. Hold function can be used for temperature, Humidity, Dew-point & Wet bulb.

Fig. D →

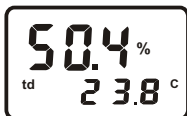


## DEW POINT FUNCTION

Press and hold (**td/WBT**) button until "**td**" appears on left side of display.

Unit will now display Dew Point Temp. See Fig.E

Fig. E →

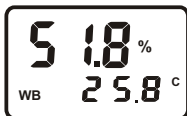


## WET BULB FUNCTION

Press and hold (**td/WBT**) button until **WB** appears on left side of display.

Unit will now display Wet Bulb temperature. Intermittent flashing of **WB** (See Fig.F) indicates that current reading is being calculated and updated due to constant changes in humidity & temperature in environment.

Fig. F →



## MIN./MAX. FUNCTION

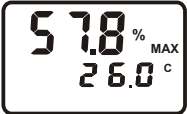
- (1) Press and hold **MN/MX** button until (**MIN**) appears on display.(See Fig.G) Display is now showing minimum humidity and temperature reading in memory.
- (2) Press and hold **MN/MX** button again until (**MAX**) appears on display. (See Fig.H) Display is now showing maximum humidity and temperature readings in memory.
- (3) To return to current temperature and humidity readings press and hold **MN/MX** button until Min or Max disappear from display.
- (4) To clear current **MIN** and **MAX** reading from memory press and hold. Reset button until entire display flashes.

Fig. G →



54.6 % MIN  
25.0 °C

Fig. H →



57.8 % MAX  
26.0 °C

### LOW-BATTERY

The entire display flashing is the signal to replace batteries at once. Failure to replace batteries will have an effect on the accuracy of the readings received from the hygrometer.

**Note:** Remember Low Batteries will tend to give inaccurate readings, so make sure you have good batteries.

**Caution:** Please do not immerse probe into liquids as this will cause permanent damage to the sensor.

## MAINTENANCE

- ✓ The meter is calibrated in house before shipping.
- ✓ To maintain the meter in the good condition for use , recommend to calibrate the meter after long time using.
- ✓ **Cleaning:**  
Use a damp cloth and mild soap to clean the case of the meter, do not use harsh detergents or abrasives as these may mar the finish or damage the unit's case with an adverse chemical reaction.

## CALIBRATION MODE

The calibration performance is only available for the calibration code was not deleted before shipment.

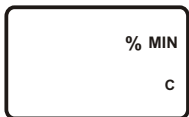
And there are 2 calibration method : one is Manual calibration , another one is Automatic calibration.

### **Manual Calibration :**

Turn off the meter , then plug the meter probe into the 33% salt bottle and then power on the meter by pressing " **ON/OFF** " button and the **C/F** button at the same time. When LCD screen shows a full display, release the **ON/OFF** key. You will see the display of **C** and **F** at the lower right corner of LCD screen , then release the **C/F** button. The LCD will display only the default setting of temperature unit **C** or **F**. Press "**RST**" key and you will see a "**% MIN**" display on the right upper corner.

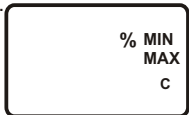
See Fig.H ,please leave the meter in the bottle for at least 40 minutes and the meter will start the calibration process. When the calibration for 33% is done ,you will see a **MIN** and **MAX** display on the LCD screen. Press **C/F** button to save the calibration of 33% . The LCD shows "s" in 2 seconds (See Fig.K) and then resume normal measurement. Turn off the meter, the calibration of 33% is completed .

Fig. H →



If you want to calibration 75% , please remove the meter probe from the 33% salt bottle and plug it into the 75% salt bottle. Then press the "**MN/MX**" button, you will see a **% MAX** display on the LCD.(See Fig.I)Then leave the meter in the 75% bottle for another 40 minutes. When the 75% calibration is completed, the screen shows **MIN** and **MAX** ,(See Fig.J) press **C/F** button to save the calibration value of 75%. The LCD will show "s" (See Fig.K) for 2 seconds and then resume to the normal measuring mode. You can remove the meter from the 75% bottle now .

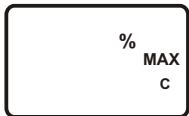
Fig. I →



↓ Fig. K



Fig. J →





## Automatic Calibration :

Turn off the meter , then plug the meter probe into the 33% salt bottle and then power on the meter by pressing "**ON /OFF**" button and the **C/F** button at the same time. When LCD screen shows a full display, release the **ON/OFF** key. You will see the display of **C** and **F** at the lower right corner of LCD screen , then release the **C/F** button. The LCD will display only the default setting of temperature unit **C** or **F**. Press "**RST**" key and you will see a "**% MIN**" display on the right upper corner. (See Fig.H) ,please leave the meter in the bottle for at least 40 minutes and the meter will start the calibration process automatically. When the calibration for 33% is done ,you will see a **MIN** and **MAX** display on the LCD screen.

You may turn off the meter to finish 33% low humidity calibration or keep going for 75% high humidity calibration.

Remove the meter probe from the 33% salt bottle and plug it into the 75% salt bottle.

Then press "**MN/MX**" button, you will see a "**% MAX**" display on the LCD. (See Fig.I)Then leave the meter in the 75% bottle for next 40 minutes.

When the 75% calibration is completed, the screen shows **MIN** and **MAX** ,(See Fig.J) ,it means the 75% calibration is completed , and the meter resume to the normal measuring mode.

You can remove the meter from the 75% bottle now .

## TROUBLESHOOTING

- ? **Power on but no display.** Check the battery are in place and making good contact or correct polarity , replace a new battery or attach optional AC adaptor for the weak battery caused.
- ? **No Display.** Make sure battery is not empty , if the display disappear , check sleep mode is active. Refer to the Disable sleep mode function for a long time using the measurement.
- ? **Screen flashing.** Battery low , the batteries need to be replaced.
- ? **Er 1, Er 3 ,Er 4 .** Circuit error , return the unit to the store for repairing. See Fig.L as an example.
- ? **Er 2 .** Improper calibration; Probe managed.
- ? **Er 5.** Sensor damaged, send back the unit to the store you bought for re-pairing , Humidity reference needs to be changed.

Fig. L →



Er 4

## MATERIAL SUPPLIED

This package contains:

- ✓ The meter x 1
- ✓ Battery x 2 (AAA size )
- ✓ Operation manual
- ✓ Gift /plain white box x 1

## SPECIFICATION

### **Temperature range:**

Model: 8701 (grey color body)  
-10~+50°C (+14~+122°F)

Model: 8703 / 8705 (black color body)  
-20~+50°C ( - 4~+122°F )

### **Accuracy :**

#### Relative Humidity :

Model: 8701  
5~95%RH  $\pm$  4%25°C

Model: 8703/8705  
0~100%RH  $\pm$  3%25°C

Temperature :  $\pm$  1°C

### **Pocket size :**

16.5mm(H) x 48.52mm(W) x 170mm(L)

### **Response time :**

Model: 8701 ,80 seconds typical

Model: 8703/8705,60 seconds typical

**Battery life** : Typical 500 hrs.

**Package** : Gift box, Battery, Manual.

**Weight** : 75g(Approx.)

**Power** : 2 x 1.5V AAA battery

Battery low indication.

Auto power off(20min),

Disable sleep mode.

## 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.