

TENMARS

TM-183N

Temperature/Humidity Meter User's Manual



HB2TM183N000

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1 Introduction

This meter uses precision capacitive humidity sensor and NTC temperature sensor designs.

2 Accessories

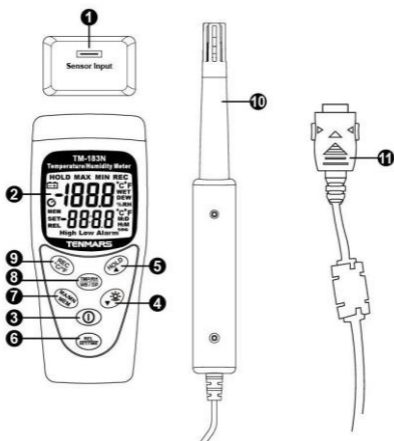
- 1 Meter
- 1 Temperature and Humidity probe
- 1 9V battery
- 1 Carrying case
- 1 User's Manual

3 Safety Precaution

	Note! Please refer to this manual. Improper use may damage the meter and its components.
	Complies with European Directive.


- Do not operate in environments with flammable gas or humid environments.
- Operating altitude: up to 2000M.
- Operating environment: Indoor use; Pollution degree 2.
- Clean with soft cloth when dirty, such as glasses cloth. Do not clean with chemicals and other solvents.
- EMC: EN61326-1: CISPR 11: Group 1, Class B
 - ◇ **Class B** – Equipment for use in all establishments other than domestic.
 - ◇ **Group 1** – RF energy generated is needed for internal functioning.

4 Instrument Description





1. Temperature/humidity probe input terminal
2. LCD display
3. On/off button
4. Backlight and setting downwards button
5. HOLD and setting upwards button
6. Relative value/alarm setting/time display switch button
7. Maximum/minimum value and read record button
8. Dew point/wet bulb/temperature/relative humidity switch
9. Switches between the $^{\circ}\text{C}$ or $^{\circ}\text{F}$ temperature unit and saves record
10. Temperature and Humidity probe
11. Temperature and Humidity probe connector

5 Operation


1. Connect the temperature/humidity probe onto this meter.
2. Press the  button to turn on/off and it will show full display for 0.5 seconds. Then, display the program version for 0.5 seconds, and then enter measuring mode.
3. Please connect the probe before powering on, or else it will display wrong values.

5.1 Temperature Unit Switch:


Press and hold the  button and then press the  button to switch between the temperature units.




5.2 Data Hold:

Press the  button to and on/off data hold "HOLD" symbol will be displayed on the LCD.


5.3 Maximum/Minimum Read Value Lock(MAX/MIN):

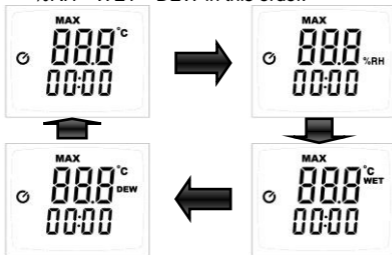
- Under measurement mode, press the  button for less than 1 second to enter MAX/MIN mode and start timing. The main display area displays the currently tested temperature and the secondary display area displays the recording time.




- Under MAX/MIN mode, press the  button repeatedly for less than 1 second and the main display area of the LCD will display the currently tested MAX→MIN values in cycle.




- Under MAX/MIN mode, press the  button repeatedly and the main display area of the LCD will display °C →%RH→WET→DEW in this order.




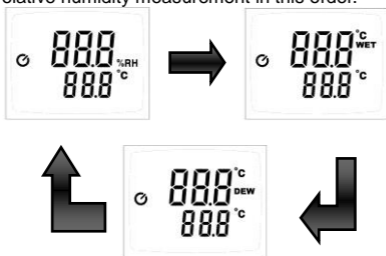
- Under MAX/MIN mode, press the  button for over 1 second to exit MAX/MIN mode.

5.4 Backlight :


Press the  button to turn the backlight on or off. The backlight will automatically turn off after 15 seconds.

5.5 Temperature/Dew Point/Wet Bulb/Relative Humidity Switch:

Under measurement mode, press the  button to switch between dew point measurement → wet bulb measurement → relative humidity measurement in this order.




5.6 Relative Value (REL):

Under measurement mode, press the  button for less than 1 second to enable or disable the REL function. When the REL function is enabled, the thermometer and hygrometer will record the current read value and the LCD display will be reset to zero. The thermometer and hygrometer will use this read value as the reference value and deducted from the measured values afterwards.





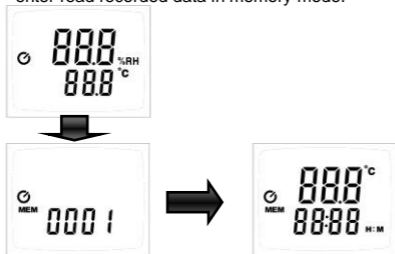
5.7 Manual Recording:



Press the  button and the text REC will be displayed on the LCD. It will also record the currently displayed data into memory.

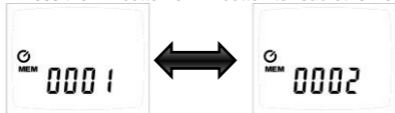



5.8 Read Data Recorded in Memory:

- Press and hold the  button and then press the  button to enter read recorded data in memory mode.




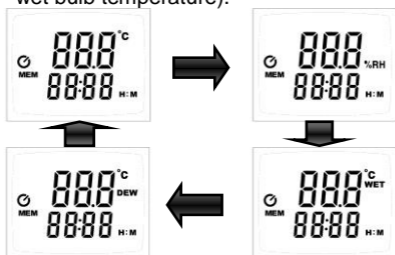
- Press the  button or  button to read other recorded data.




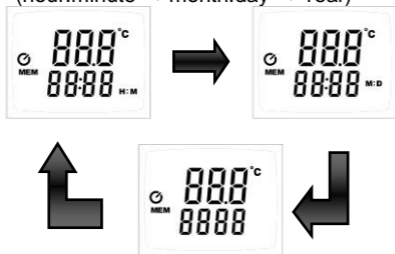
- Press the  button to change the temperature unit.





- Press the  button to change the displayed data (temperature → humidity → dew point temperature → wet bulb temperature).





- Press the  button to change the displayed time (hour:minute → month:day → Year)




- Press the  button again and then press  to exit read data recorded in memory mode.




5.9 Setting mode:

Press the  button and then press the  button to enter the setting mode.



Press the  button to switch between setting modes. (Remark 1);

Press the  button to record settings and exit setting mode.

Remark 1: You can set eight functions in setting mode

1. Enable alarm function setting
2. Low temperature alarm setting.
3. High temperature alarm setting.
4. Low humidity alarm setting.
5. High humidity alarm setting.
6. Time setting.
7. Automatic shutdown time setting.
8. Clear records.



2. Low temperature alarm setting.

6. Time setting.



3. High temperature alarm setting.

7. Automatic shutdown time setting.



4. Low humidity alarm setting.

8. Clear records.



Enable alarm function setting:

- Press the **Ⓚ** button and then press the **REL SETTING** button to enter setting mode.



- Press the **HOLD** button or **↓** button and Alarm on will be displayed on the LCD.



- Press the **TMP/TH W/BDP** button to record settings and exit setting mode.
- When the alarm sound is enabled, the **REL SETTING** button can be pressed to turn off the alarm sound and cancel the alarm.

5.9.1 Low temperature alarm setting

- Press the **Ⓚ** button and then press the **REL SETTING** button to enter setting mode.





- Press the **REL SETTING** button again to enter low temperature alarm setting.




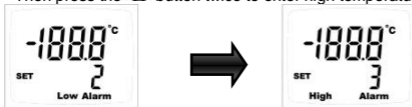
- Press the **HOLD** button or **↓** button to increase or reduce the low temperature alarm range.
- Low temperature alarm range: $-30.0^{\circ}\text{C} \sim 70.0^{\circ}\text{C}$ ($-22.0^{\circ}\text{F} \sim 158.0^{\circ}\text{F}$).
- Press the **TMP/TH W/BDP** button to record settings and exit setting mode.




5.9.2 High temperature alarm setting

- Press and hold the  button and then press the  button to enter settings mode.





- Then press the  button twice to enter high temperature alarm setting.




- Press the  button or  button to increase or reduce the high temperature alarm range.
- High temperature alarm range: $-30.0^{\circ}\text{C} \sim 70.0^{\circ}\text{C}$ ($-22.0^{\circ}\text{F} \sim 158.0^{\circ}\text{F}$).
- Press the  button to record settings and exit setting mode.




5.9.3 Low humidity alarm setting

- Press the  button and then press the  button to enter setting mode.





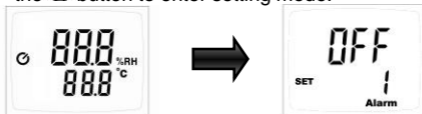
- Then press the  button three times to enter low humidity alarm setting.




- Press the  button or  button to increase or reduce the low humidity alarm range.
- Low humidity alarm range: $0\% \text{RH} \sim 100.0\% \text{RH}$.
- Press the  button to record settings and exit setting mode.




5.9.4 High humidity alarm setting

- Press and hold the  button and then press the  button to enter setting mode.





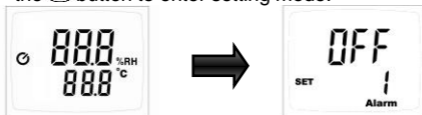
- Then press the  button four times to enter high humidity alarm setting.




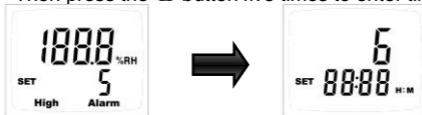
- Press the  button or  button to increase or reduce the high humidity alarm range.
- High humidity alarm range: 0%RH~100.0%RH.
- Press the  button to record settings and exit setting mode.



5.9.5 Time setting

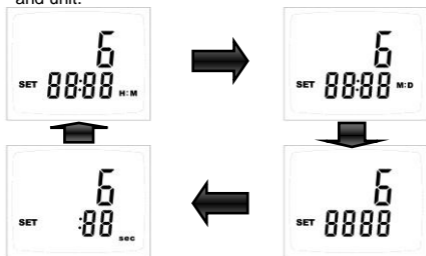
- Press and hold the  button and then press the  button to enter setting mode.






- Then press the  button five times to enter time setting.





- The time format of this model is the 24 hour format.
- Press the  button or  button to change between date, time and unit.




- Press the  button or  button to change the values.
- Press the  button to record the settings and exit setting mode.




5.9.6 Automatic shutdown time setting

- Press and hold the  button and then press the  button to enter setting mode.





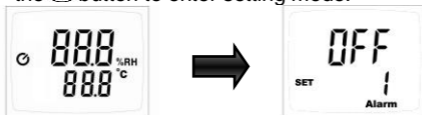
- Then press the  button six times to enter automatic shutdown time setting.




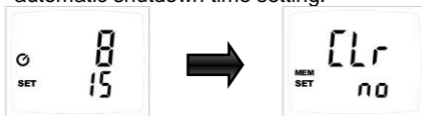
- Press the  button or  button to change the value.
- Press the  button to record settings and exit setting mode.
- When the automatic shutdown time is set to 0, it will disable the automatic shutdown function.
- The maximum automatic shutdown time setting is 99 minutes.




5.9.7 Clear memory setting

- This option is only available when there are data recorded on this unit.
- Press and hold the  button and then press the  button to enter setting mode.



- Then press the  button seven times to enter automatic shutdown time setting.



- Press the  button or  button to select whether to clear data.
- Press the  button to confirm whether to clear data and exit setting mode.
- This function will clear all recorded data.

6 General Specifications

- Read value display: Dual LCD display. The maximum displayed value of the main display area is 1999 and the maximum displayed value of the secondary display area is 9999.
- Data hold
- Low battery indication
- Over load indication: OL or -OL
- Backlight
- Automatic shutdown (preset to 15 minutes) and disable automatic shutdown function.
- Maximum/minimum/measurement elapsed time.
- Alarm
- Battery: 9V (NEDA 1604, IEC 6F22 or JIS 006P).
- Battery life: Approximately 100 hours
- Standby power consumption: Approximately 27uW.
- Operation power consumption: Approximately 35mW.
- Operating temperature and humidity: 5°C to 50°C with relative humidity under 95% (no dew).
- Storage temperature and humidity: -10°C to 60°C with relative humidity under 70% (no dew).
- Dimensions: 130x56x38mm (length x width x height)
- Testing cable length: approximately 900 mm
- Probe length: approximately 200 mm
- Weight: Approximately 170 grams (not including battery weight).

7 Electrical Specification

Accurate environmental conditions are: $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ and $\text{RH} < 80\%$

7.1 Temperature:

Range	$-20.0^{\circ}\text{C} \sim +60^{\circ}\text{C}$ ($-4.0^{\circ}\text{F} \sim +140.0^{\circ}\text{F}$)
Resolution	0.1
Accuracy	$\pm 0.8^{\circ}\text{C}$ ($\pm 1.5^{\circ}\text{F}$)

7.2 Humidity:

Range	1%~99.0%RH
Resolution	0.1 %RH
Accuracy	$\pm 3.0\%$ (20.0~80.0%RH, @25°C) $\pm 5.0\%$ (< 20.0%RH > 80.0%RH, @25°C)

7.3 Dew point temperature(DEW)

Range	$-63.0^{\circ}\text{C} \sim +60^{\circ}\text{C}$ ($-81.4^{\circ}\text{F} \sim +140.0^{\circ}\text{F}$)
Resolution	0.1
The value is calculated from the RH and Temperature.	

7.4 Wet bulb temperature(WET)

Range	$-20.1^{\circ}\text{C} \sim +60^{\circ}\text{C}$ ($-4.18^{\circ}\text{F} \sim +140.0^{\circ}\text{F}$)
Resolution	0.1

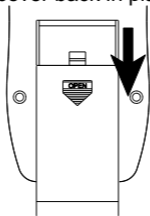
The value is calculated from the RH and Temperature.

8 Maintenance or Repair

1. When the $\square \pm$ symbol is displayed on the LCD, it means that there is insufficient power; please change the battery immediately in order to ensure its accuracy.
2. Do not place the meter in locations that have high temperature, humidity or that are exposed to direct sunlight.
3. Remember to turn off the power after usage; remove the battery if not used for a long period of time in order to prevent battery leakage and causing damages to internal components.
4. When the instrument failure, only by the authorized service provider or return the original repair.

9 Battery Replacement

1. Turn off the power.
2. Open the battery cover at the back of the meter, remove the batteries.
3. Please insert a new 9V battery according to the polarities.
4. Put the battery cover back in place.



10 Product Disposal

Note: This symbol indicates that the meter and its accessories must be separated and processed properly.

TENMARS



Professional Electrical and Environment Test & Measurement Instruments:

Battery Capacity, Impedance Tester,
TACHO Meter, LED light meter, Temperature &
Humidity meter, Infrared Thermometer, Sound
level meter, Light meter, EMF meter, UV Light
meter, RF meter, Hot wire Anemometer, CO
meter, Anemometer, Lan cable tester, CO₂
meter, Solar power meter, Radiation meter,
Clamp meter, Multimeter, Phase Rotation test,
Digital Insulation tester.

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