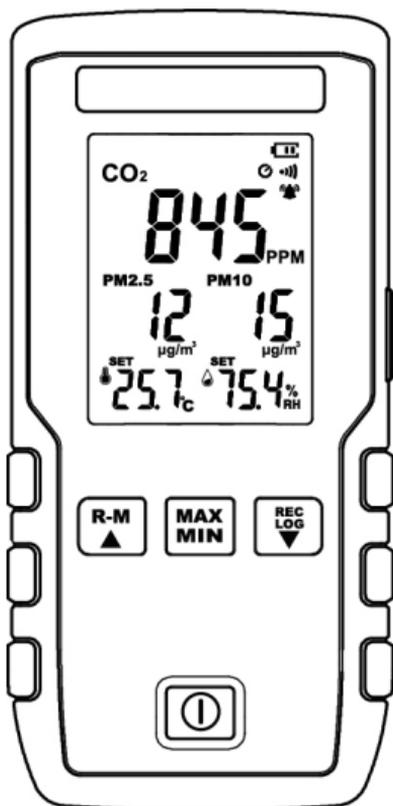


TENMARS

Multi IAQ Monitor

TM-380

User's Manual



HB2TM3800000

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1 Application

This air quality meter can measure and display CO₂, PM_{2.5}, Humidity and Temperature measurements and is ideal for monitoring indoor air quality in a variety of environments.

2 Accessories

- 1 Meter (with a 3.7V Rechargeable lithium battery)
- 1 User's Manual
- 1 Micro USB cable

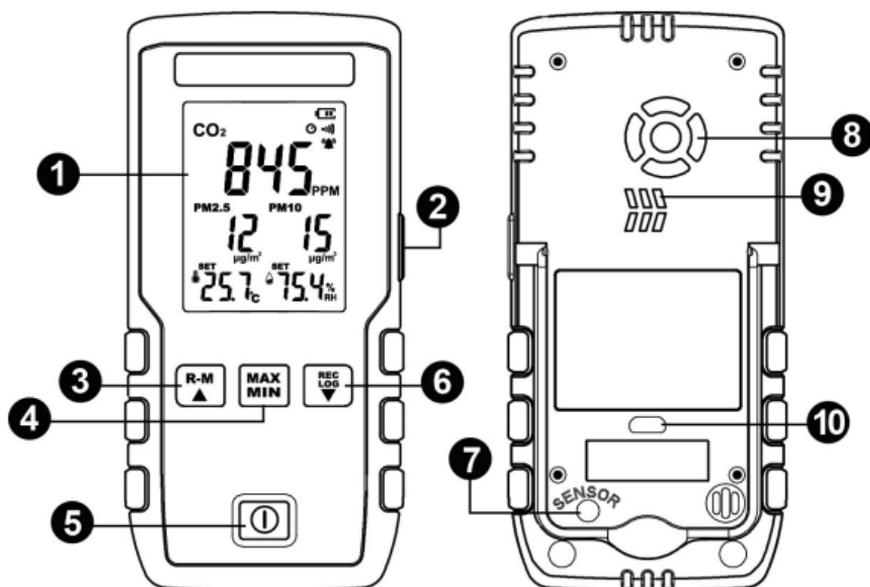
3 Safety Precaution

	Caution! 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.

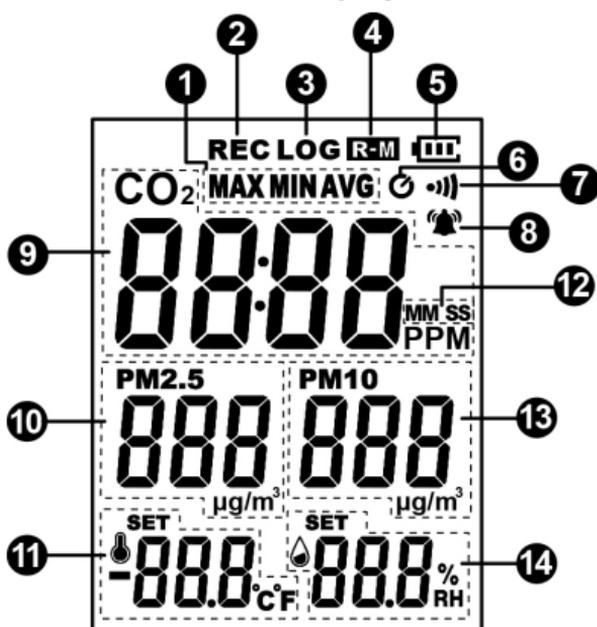
4 Instrument Description

4.1 Feature and function



1. LCD
2. Right-side button
3. Memory reading / Up button
4. MAX / MIN / AVG button
5. Power button
6. Single log and auto-record button/Down button
7. Temperature and humidity sensing port
8. Air outlet for sensor
9. Air inlet for sensor
10. Micro USB jack

4.2 Indication on the LCD display



- | | |
|--------------------------------|-----------------------------|
| 1. MAX / MIN / AVG
/MAN MIN | 9. CO ₂ |
| 2. Manual recording | 10. PM2.5 |
| 3. Auto-recording | 11. Temperature |
| 4. Read record | 12. MM minute,
SS second |
| 5. Battery indicator | 13. PM10 |
| 6. Auto-power off | 14. Humidity |
| 7. Buzzer | |
| 8. Alarm | |

5 Operation

Please hold the meter in the following way for the correct measured value:

The placement follows the electrical specifications described in Section 7.



This is a suitable way to hold the meter, holding for a long time may affect the accuracy.



This is not a proper way to hold the meter, it will block the temperature and humidity sensors.



This is not a proper way to hold the meter, it will block the PM2.5, PM10 and CO2 sensors.



5.1 Power on/off

Press  to turn the power on or off.

5.2 Auto Power Off

At the power-on status, press and hold  for more than 2 seconds to disable or resume auto power off function. When auto power off is activated, the indicator  appearing, and it will automatically turn off after 30 minutes.

5.3 Backlight mode

Press “right-side button” to turn on or off the backlight.
(When the red backlight for alarm is on, this button is invalid)
The backlight mode is turned off automatically after 15 seconds.

5.4 MAX/MIN AVG and MAN MIN

Press  to enter this function, the MAX is shown on the screen and it displays the maximum value.

Press  repeatedly to select the function of MIN/AVG/MAX MIN/MAX and update the displayed value. When select MAX MIN function, it displays the current measured value.

5.5 REC Manual record

Press  to save one data log, the “REC” and the log number appear on the LCD for one second. For an example of the log number 10, it will increase by 1 when pressing  every time. When reaching the maximum log number 20, **FULL** appears.

5.6 LOG starts the auto-recording function

Press and hold  for more than 2 seconds, “**LOG**” appears on the LCD, and auto-recording starts. If the power is insufficient during auto-recording,  appearing, auto-recording will be forcibly stopped. When reaching the maximum log number 20, **FULL** appears.

Press and hold  again for more than 2 seconds to exit the auto-recording function.

5.7 Read the data recorded in the memory

Press  to enter the memory-reading mode, while **R-M** and the log number appear on the LCD for one second, the record is then displayed. Read the data recorded in the memory with  or .

Press and hold  to exit this mode.

5.8 °C or °F units

At the shutdown status, press and hold , then press  to turn on the meter, after the software version appears, release .

Repeat the above steps to switch the unit.

5.9 Clear memory

At the shutdown status, press and hold  and then press  to turn on the meter, the  and software version appears successively on the LCD, release the  to clear the memory.

5.10 Turn on / off the key sound

The sound is defaulted as on and the  is displayed.

At the shutdown status, press and hold  and then press  to turn on the meter, after the software version appears, release  and the  disappears, the key sound is off.

Repeat the above step to turn on the key sound.

5.11 Resume the factory settings

At the shutdown status, press and hold “right-side button” and then press , the  and software version appears successively on the LCD, release the “right-side button” to complete the process of resuming to the factory settings and clearing the memory.

- Auto-shutdown: OFF
- Key sound: On
- The calibration value resumed to 0
- CO₂ Abc OFF
- Memory cleared

5.12 Function settings

Press “right-side button” for more than 2 seconds to enter the setting mode.

Press the “right-side button” repeatedly to enter the setting function 1 ~ 8 in sequence:

SET 1. Time interval setting

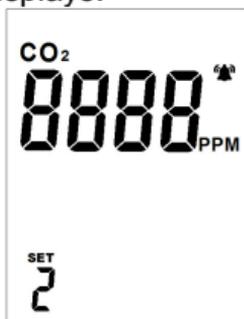
1. The LCD displays:



2. Press  or  to select the interval 5 seconds / 10 seconds / 5 minutes / 10 minutes / 20 minutes / 30 minutes / 60 minutes; the default value is 5 seconds.
3. Press the “right-side button” again to enter **set 2**.

SET 2. CO₂ alarm setting

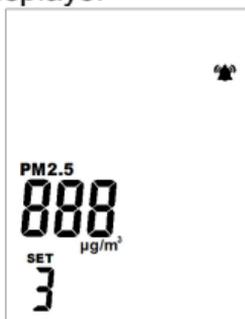
1. The LCD displays:



2. Press  to move the digit, and the selected digit will flash.
3. Press  or  to increase or decrease the CO₂ value.
4. Press the “right-side button” again to enter **set 3**.

SET 3. PM2.5 alarm setting

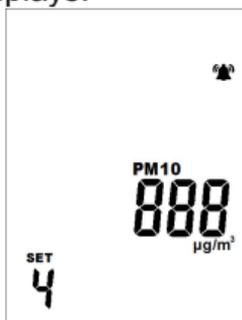
1. The LCD displays:



2. Press  to move the digit, and the selected digit will flash.
3. Press  or  to increase or decrease the CO₂ value.
4. Press the “right-side button” again to enter **set 4**.

SET 4. PM10 alarm setting

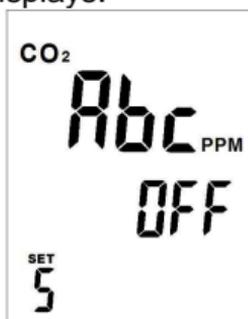
1. The LCD displays:



2. Press  to move the digit, and the selected digit will flash.
3. Press  or  to increase or decrease the CO₂ value.
4. Press the “right-side button” again to enter **set 5**.

SET 5. (Factory use only) CO₂ Abc self-calibration mode

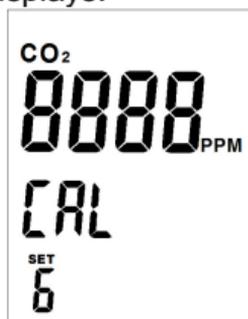
1. The LCD displays:



2. This is for factory calibration use only. Please do not change it.
3. Click the “right-side button” again to enter **set 6**.

SET 6. CO₂ manual calibration

1. The LCD displays:



2. Directly increase or decrease the displayed value of CO₂, press the  to move the digit, and the selected digit will flash.
3. Press  or  to modify the value.
4. Press the “right-side button” again to enter **set 7**.

SET 7. Temperature calibration

1. The LCD displays:



2. Directly increase or decrease the temperature value, press the  to move the digit, and the selected digit will flash.
3. Press  or  to modify the value.
4. Press the “right-side button” again to enter **set 8**.

SET 8. Humidity calibration

1. The LCD displays:



2. Directly increase or decrease the temperature value, press the  to move the digit, and the selected digit will flash.
3. Press  or  to modify the value.
4. Press the right-side button again to return to the measurement mode.

6 General Specifications

- Real-time measurement of CO₂/PM2.5/PM10/temperature/humidity.
- Maximum / minimum / average value.
- Auto-power on / off function.
- Adjustment and calibration function (CO₂/temperature/humidity).
- CO₂/PM2.5/PM10 red backlight alarm.
- Manual record and auto-record.
- Key sound assists to ensure the operation works.
- Overload indication **OL**.
- Battery: 3.7V 2000mAh rechargeable lithium battery
- Transformer for charging: 1A/5V
- Battery life: continuous use for approximately 6 hours
- 5V micro USB interface for external power supply
- When battery-low indicator  shows as the following figure, the power will be turned off after 5 seconds.



- Charging indication: The battery indicator will sequentially vary as  →  →  from right to left during charging and keep  when fully charged.
- °C or °F unit selection.
- When the external power supply is connected, the auto-power off is disabled, and the white backlight is always on.

- CO₂ /PM2.5/PM10 red backlight alarm setting function

Setting	CO ₂	PM2.5	PM10
value	1000PPM	35µg/m ³	75µg/m ³

When the measured value reaches the setting value for alarm, the LCD backlight shines in red and related measurement items flash.

- 20 logs for manual and automatic recording values.
- Auto-recording time interval setting: 5 seconds, 10 seconds, 5 minutes, 10 minutes, 20 minutes, 30 minutes, 60 minutes.
- Sampling time: 2.5 seconds (5 types, 0.5 seconds for each).
- Dimensions: 150x65x22mm (L x W x H).
- Weight: 190 g.
- Operating temperature and humidity: 0°C ~ +50°C, <80%RH (no condensation).
- Storage temperature and humidity: 0°C ~ +60°C, <70%RH (no condensation).
- Display size: 52mm (L) x 40mm (W).



Caution

If to use the meter in a high-humidity environment, please place the meter in a low-humidity environment for 24 hours after use.

7 General Specifications

Ambient temperature range for accurate measure: 18°C (64°F) ~ 28°C (82°F)

7.1 PM2.5

Sensor	Laser particulate matter sensor
Measuring range	0-500 $\mu\text{g}/\text{m}^3$
Accuracy	$\pm 8\mu\text{g} : \leq 50\mu\text{g}/\text{m}^3$ $\pm 10\%$ of reading value: $> 50\mu\text{g}/\text{m}^3$
Resolution	1
Reaction time	<10seconds

7.2 PM10

Sensor	Laser particulate matter sensor
Measuring range	0-500 $\mu\text{g}/\text{m}^3$
Accuracy	$\pm 10\mu\text{g} : \leq 50\mu\text{g}/\text{m}^3$ $\pm 15\%$ of reading value: $> 50\mu\text{g}/\text{m}^3$
Resolution	1
Reaction time	<10 seconds

7.3 CO₂

Sensor	Non-Dispersion Infrared(NDIR)
Measuring range	400 to 9999ppm
Accuracy	$\pm 70\text{ppm} \pm 3\%$ of readings. (400-2000ppm)
Resolution	$\pm 1\text{ppm}$
Reaction time	90% during about 2 minutes

7.4 Temperature

Sensor	Bandgap temperature sensor
Effective range	-10°C~50°C / 14°F~122°F
Accuracy	±1.0°C/±1.8°F (Non-charging and 30 minutes after charging)
Resolution	0.1°C / 0.1F (0~35°C / 32°F~95°F) ; 1°C / 1°F (Above 100°C /°F or below -10°C /°F)
Reaction time	About 1 second

7.5 Humidity

Sensor	Capacitive humidity sensor
Effective range	1-99%
Accuracy	±5.0%RH(10~90%); ±8.0%RH(<10%,>90%) no condensation, at 25°C
Resolution	0.1%
Reaction time	About 4 seconds

8 Maintenance or Repair

1. For the battery-low indicator:  indicates the battery full;  indicates the battery low, please charge it in time.
2. If dirty, please wipe it with a soft cloth, such as a glasses cloth. Do not wipe it with chemical solvents.
3. If fault on the meter, it can only be sent to the authorized service suppliers or sent back to the original factory for maintenance.



Caution

When the LCD shows the battery-low indicator , please charge it in time.

9 Product disposal



Caution: This symbol indicates that this product and its accessories shall be subject to a separate collection and correct disposal, please not throw it away directly to avoid environmental pollution.

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**Professional Electrical and Environment Test &
Measurement Instruments:**

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

**Our products of high quality are selling well all
over the world**

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