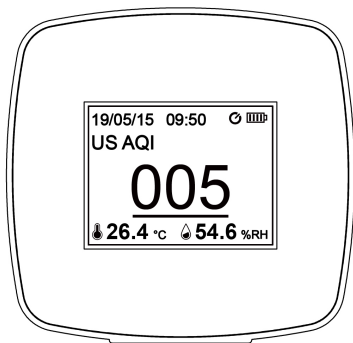


PM 2.5 Indoor Air Quality Monitor (Particle Air Quality Detector) TM-280 User's Manual



HB2TM2800001

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1 Introduction

The PM 2.5 Air Quality Monitor is designed with a laser particulate matter sensor for and a high-precision humidity/temperature sensor.

PM2.5 is:

A lot of pollutants existing in the air, where the dust-like particles floating in the air are called particulate matter (PM). Distinguishing particle size, the particles smaller than or equal to 2.5 microns, i.e. PM2.5 is commonly known as particulate matter in units of $\mu\text{g}/\text{m}^3$. With the diameter less than 1/28 of human hair thickness, the particles are so fine as to penetrate the alveoli, enter the blood vessels directly, and even circulate throughout the body via the blood. Therefore, the impact on the human body and ecology cannot be ignored.

The regulations for PM2.5 in Taiwan:

The Air Quality Act of Taiwan Environmental Protection Administration stipulates that the average value shall not exceed $35\mu\text{g}/\text{m}^3$ within 24 hours.

The standard adopted by Taiwan is the same as the standard of the US, please refer to the US AQI if to view the AQI in Taiwan.

Lookup Table for AQI and PM2.5 Value

Air Quality Index (AQI)	Corresponding PM2.5 Concentration		Air Pollution Level for Health	Color Code
	CN standard	US standard		
0 - 50	0-35	0-12	Level 1 (Excellent)	Green
51 - 100	36-75	13-35	Level 2 (Good)	Yellow
101 - 150	76-115	36-55	Level 3 (Lightly Polluted)	Orange
151- 200	116-150	56-150	Level 4 (Moderately Polluted)	Red
201 - 300	151-250	151-250	Level 5 (Heavily Polluted)	Purple
301 - 500	251-500	251-500	Level 6 (Severely Polluted)	Maroon



AQI is:

The acronym of Air Quality Index, a new indicator for the ambient air quality, and used to describe the status of air quality.

2 Accessories

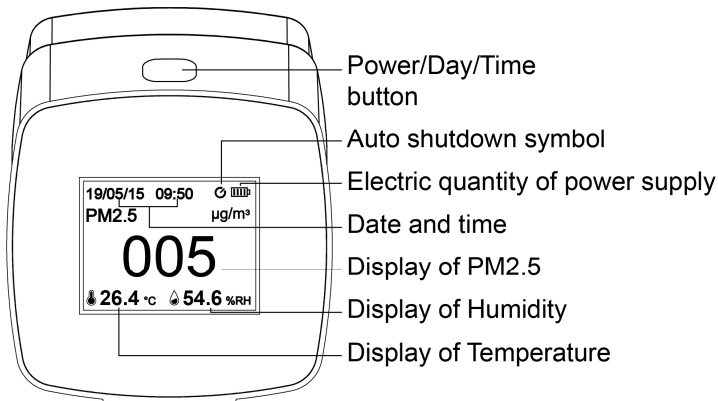
- 1 Instrument (built-in 18650 Rechargeable Li-ion Battery)
- 1 USB AC to DC adaptor, 5V/1A
- 1 USB cable (for charging use)
- 1 User's Manual

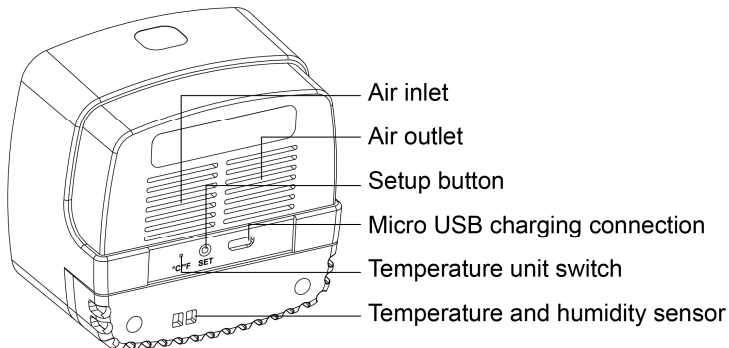
3 Safety Precaution

	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.
- For the qualified low-power radio-frequency devices, the company, shop, or user may not unauthorizably change the frequency, increase the power or change the characters and functions of original design without permission.
- The use of qualified low-power radio-frequency devices shall not either affect flight safety nor interfere with legitimate communications. If interference found, deactivate the devices immediately and improve until no interference occurs, then it can just be used.
- 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.

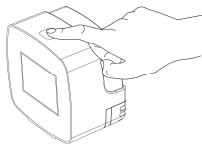
4 Instrument Description





5 Operation

5.1 Turning on

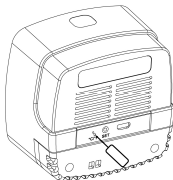


Press and hold the power button for more than two seconds to turn on or turn off.

Click the power button to sequentially select the display mode of PM2.5 → US AQI → CN AQI.

PM2.5	US AQI	CN AQI

5.2 Switching the temperature unit

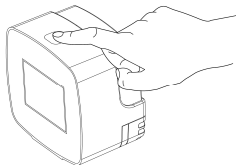
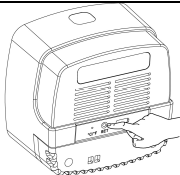


Poke the setting hole on the rear with a SIM card pin or paper clip for switching between °C and °F, as shown below.


5.3 Time setup

Press the "SET" button repeatedly:
ten digit of years → single digit of
years → month → days, flashing in
sequence

Change the number by pressing
the "Date and Time Setting"
button while flashing





6 General Specifications

- Battery: rechargeable lithium battery of 3.7V 18650 2600mAh (using primary cell made in Japanese/Korean lithium battery), with the value 1A/5V for charging and using.
- Battery life: approximately 9 hours for continuous use.
- Auto power off: Automatically shut down after 60 minutes in case of no external power input.
- Long-term use mode: Auto shut down will be disabled when connecting to an external power input. (the symbol  disappears).
- Operation temperature and humidity: 5°C to 40°C ; < 80%RH (no condensation)
- Storage temperature and humidity: -5 °C to 40°C, < 70%RH (no condensation)
- Dimension: 84×81×55 mm (L×W×H)
- Weight: approximately 215g (battery included)

7 Electrical specifications:

Measurement range of particulate matter (PM 2.5)	0-500 $\mu\text{g}/\text{m}^3$
Resolution	1
Reaction time	<10 seconds
Accuracy	$\pm 5\mu\text{g}$ ($\leq 50\mu\text{g}$) $\pm 10\%$ reading ($> 50\mu\text{g}$)
Temperature measurement range	-20~50°C (-4~122°F)
Resolution	0.1
Reaction time	5 seconds (at least)
Accuracy	$\pm 2^\circ\text{C}$ (3.6°F) No external power supply
Measurement range of humidity	1 - 99% RH
Resolution	0.1
Reaction time	8 seconds (at least)
Accuracy	$\pm 3\% \text{RH}$: (20~80%RH @25°C) $\pm 5\% \text{RH}$: other @25°C

8 Maintenance

1. Read the instruction manual in detail and check if any operational error.
2. For the low battery indication:  indicates the battery full;  indicates the battery low, please charge it timely.

9 Cleaning

Wipe it with a soft and dry cloth for cleaning, where the wet cloth, solution or water etc. is not allowed.

10 Product Disposal



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



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