Temtop

M2000C 2nd Generation
Multi-functional Air Quality Detector
User Manual

Factors Affecting Air Quality

PM2.5 (Particulate Matter 2.5) refers to fine particles with a diameter of 2.5 micrometers or less. Due to its tiny size, PM2.5 can be absorbed into bloodstream and the lungs, so that long-term exposure to high concentration of PM2.5 environment may cause eye and nose irritation, cough, asthma, emphysema, lung disease, heart attacks, cancer and etc.

PM10 (Particulate Matter 10) refers to particles with a diameter of 10 micrometers or less. Due to the larger size, it's inhalable but penetrates no further than bronchi as larger particles can be filtered out by cilia and mucus of nose and throat. It is normally considered as less harmful to health than PM2.5.

CO_2 (Carbon dioxide) is a colorless and odorless gas that is usually derived from the breath of humans and animals. High CO_2 concentration means that fresh air or ventilation is required, otherwise it may cause problems such as drowsiness, dizziness, loss of attention, and cognitive impairment.

Important!

- Do not place the detector in highly polluted environments (concentration of CO_2>2500ppm or particle>500μg/m^3) for a long time to avoid damage to the sensor.
- Do not cover the air inlet/outlet during detection, or let fluff or hair enter the detector.
- Do not use the detector in humid environments with strong odor.
- Do not make contact with organic solvents, such as glue/adhesives/paint/alcohol etc.
- If battery level shows 🔋 , please charge the detector promptly to avoid effects during use (also chargeable when turned off).

Overview

① Buzzer Status   ② Measuring Status   ③ Display   ④ Menu Button

⑤ Increase/Up Button   ⑥ USB Port   ⑦ Date & Time   ⑧ Power Level

⑨ Back Button   ⑩ Power/OK Button   ⑪ Decrease/Down/Switch (Start/Pause) Button
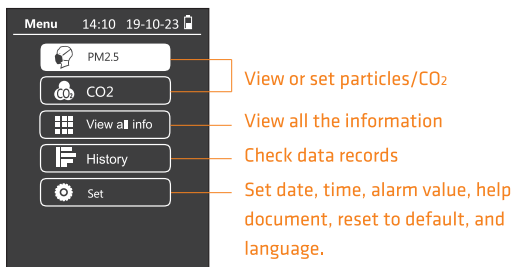
Operation

⚠ Warning!

- First use or unused for a long time: Please put it outside over 6 hours for calibration.
- Indoor use: Keep the room/area airtight for 10 minutes to obtain more accurate results.
- When calibrating the CO_2 sensors, please adjust the detector to the calibration interface and place it outdoors in a cool and ventilated place for 30 minutes. Detection results will be much more accurate.

① ON

Press and hold $\frac{OK}{\cup}$ for 2 seconds to turn on the detector.
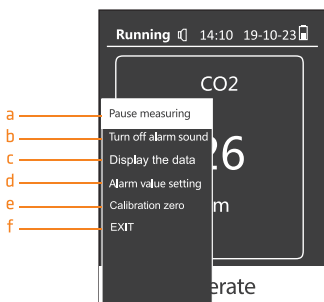
② Detection

Press ☰ to enter the main menu interface (see the figure below), then press ▲ or ⤴ to locate the option to view or set and press $\frac{OK}{⏻}$ to confirm.

CO2	View or set particles/CO_2
View all info	View all the information
History	Check data records
Set	Set date, time, alarm value, help document, reset to default, and language.

Note: It takes about 3 minutes for the CO_2 sensor to warm up and then enter detection status.

View or Set PM2.5/CO₂

In each interface, press ☰ to display more functions. Take CO_2 interface for example, press ☰ button, you may see the following function options:

a — Pause measuring
b — Turn off alarm sound
c — Display the data
d — Alarm value setting
e — Calibration zero
f — EXIT

a. Pause measuring: Pause or restart detecting CO_2.
**b. Turn on alarm sound:** Mute / Unmute the buzzer.
c. Display the data: Display (or not) CO_2 concentration curve.

d. Alarm value setting: Set high alarm limit.

   Operation: Press ▲ or ⬩ button to adjust the value and press ☰ to switch digits. Then press **Save** and $\frac{OK}{U}$ to save the setting and exit the interface, or press **Exit** and $\frac{OK}{U}$ to exit without saving the setting (See the figure below).
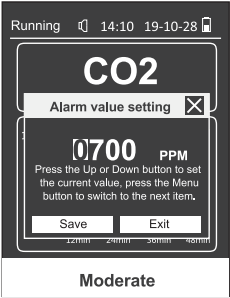

e. Calibration zero : Calibrate the sensor to zero (no such function for PM2.5 interface). Take CO_2 interface below for example:
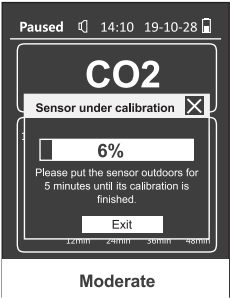

f. EXIT: Exit current interface.

View all info

The **View all info** interface displays all the detected data including the concentration of PM2.5, PM10, CO_2, number of particles, temperature and humidity. Press ☰ to switch between °C and °F. See the figures below.
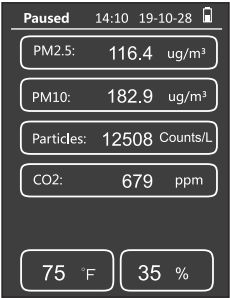
Press 🔄 to pause or detect; press ⚡ to back to the main menu interface.

History

The **History** interface includes **Storage interval** and **Data export** functions (See the figure below).
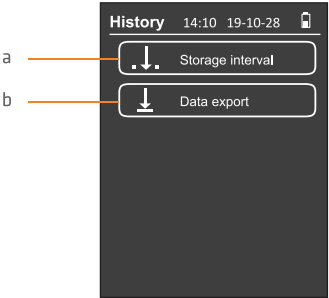
Operation: Press ▲ or 🔄 to switch between **Storage interval** and **Data export**, then press OK/⏻ to enter the corresponding interface.

a. Storage interval: Press ≣ to switch between digits, **Save** and **Exit**. When you select a digit, press ▲ or ↙ to adjust the value to your desired storage interval among 1, 5, 10, 30 and 60 minutes, then locate the option to 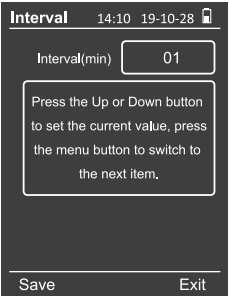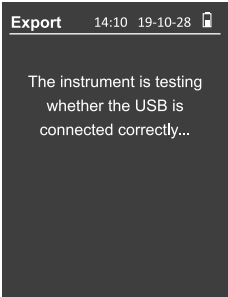**Save** and press $\frac{OK}{U}$ to save the setting and exit the interface; or locate the option to **Exit** and press $\frac{OK}{U}$ to exit the interface without saving the setting.

Interval	14:10 19-10-28 🔋
Interval(min)	01
Press the Up or Down button to set the current value, press the menu button to switch to the next item.	
Save	Exit

b. Data export: In this interface, you will see the following tips.

Export	14:10 19-10-28 🔋
The instrument is testing whether the USB is connected correctly...	

If connected to the computer successfully by the USB cable, the detector will pop up a tip **USB connection successful**; If not, it will remind you of the failure (See the figures below).

Export	22:30 19-04-08 🔋
USB connection successful! Please do not disconnect the USB during the connection. If you want to exit the USB connection mode, press the 'Back' button!	

Export	22:30 19-04-08 🔋
No USB connection detected!	

After connected successfully, the detector will generate **in the computer** a removable storage device **Temtop**, which contains a folder named **History**. The history folder includes a CSV format file listing the date and time, PM2.5, PM10 and CO_2 concentration (see the figure). Please save it to your computer for viewing.

Date	PM2.5	PM10	CO2
2019/10/28　15:05	6	10	2038
2019/10/28　15:10	7	11	1795
2019/10/28　15:15	8	14	1914

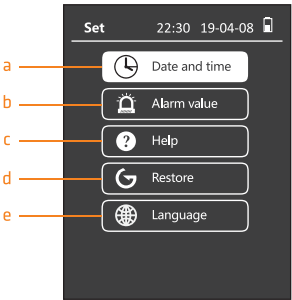After the data is copied and viewed, please press ⏻ to exit and restart the detector (See the figure below).
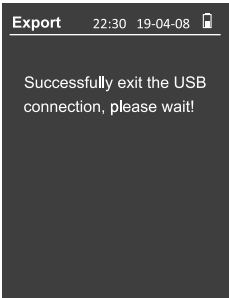

Set

The Set interface displays 5 options below.

Operation: Press ▲ or ⏻ to select the desired option; press OK/⏻ to enter the interface.

a. Date and time: Allows customized setting of year, month, date and time (See the figure below).

Operation: Press ▲ or ✲⁴ to adjust time and press ☷ to switch to next digit. Then press ☷ to switch to **Save** or **Exit**. Press $\frac{OK}{\cup}$ to finish the settings and exit the interface.
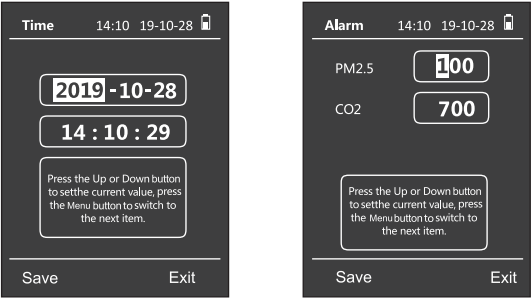
b. Alarm value: Set high alarm limit for PM2.5, or CO_2 concentration (See the figure below).

Operation: Press ▲ or ✲⁴ to set high alarm limit for PM2.5, or CO_2 concentration and press ☷ to switch to next digit. Then press ☷ to switch to **Save** or **Exit**. Press $\frac{OK}{\cup}$ to finish the settings and exit the interface.

c. Help: View the help information for using the detector (See the figure below).

Operation: Press ▲ or ✲⁴ to view the information that help you use the detector; press 🔙 to back to Set interface.

d. Restore: Reset to the default parameters (See the figure below).
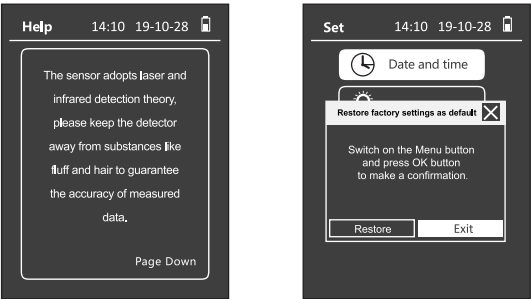**Operation:** Press ☰ to switch to **Restore** or **Exit**. Press $\frac{OK}{\cup}$ to confirm the settings and exit the interface. If reset, all the customized settings will automatically turn to the default.

e. Language: Set Chinese or English as displayed language (See the figure below).
Operation: Press ☰ to switch between Chinese and English, press $\frac{OK}{\cup}$ to confirm; then press ☰ again to switch to **Save** or **Exit**; press $\frac{OK}{\cup}$ to finish the settings and exit.

③ Multipoint Detection
Repeat ② Detection at multiple points in the targeted area to get a more comprehensive understanding of your air quality.

④ OFF
Under normal operating status, press and hold $\frac{OK}{\cup}$ for 2 seconds to turn off the detector. It will be auto off after 1 hour of inactivity.
Note: Auto off function is invalid in Histogram interface.

Specifications

Model	M2000C 2nd
Dimensions	223.5x73.5x37.5mm / 8.8x2.8x1.4in.
Battery capacity	3000mAh
Battery life	6-8h
Input	DC5V; 1A
Display	TFT color screen
Operation environment	Temperature range: 0-50°C (32-122°F) Humidity range: 0-90% RH Atmospheric pressure condition: 1 atm
PM2.5	Sensor: Laser PM sensor Measuring range: 0-999 $\mu g/m^3$ Resolution: 0.1 $\mu g/m^3$ Accuracy: $\pm 10\,\mu g/m^3$(0-100 $\mu g/m^3$) $\pm 10\%$(100-500 $\mu g/m^3$)
PM10	Sensor: Laser PM sensor Measuring range: 0-999 $\mu g/m^3$ Resolution: 0.1 $\mu g/m^3$ Accuracy: $\pm 15\,\mu g/m^3$(0-100 $\mu g/m^3$) $\pm 15\%$(100-500 $\mu g/m^3$)
Carbon dioxide (CO_2)	Sensor: Non-Dispersive Infrared (NDIR) CO_2 sensor Measuring range: 0-5000 ppm Resolution: 1 ppm Accuracy: $\pm$(50 ppm + 5% reading)

FAQ:

Q: Why is the data reading very high/over-range after the detector is turned ON?

A: As being packed in ink printed package box over time may interfere with the sensor due to the remaining organic volatile residue inside the package. Therefore, after unpacking, please put the detector in a ventilated place to help accelerate its data recovery.

Q: Why is data reading unstable?

A: As airflow in the environment is changing, the distribution of organic matter concentration may be uneven. Temtop recommends trying again in low airflow areas.

Q: Why is the test result abnormal or below normal?

A: ① Please check whether the air inlet or outlet has been covered or fluid is in.
   ② Gently shake the detector during detection to increase the interaction with surrounding air.
   ③ The sensor may be not recovered. Please place the detector outdoors for ventilation.

Q: Can the calibration be accelerated if the detector is facing the outlet of air conditioner / fan?

A: No. The temperature difference or air flow speed at the air conditioner/fan outlet is relatively high, which may cause condensation or temperature changes on the sensor, affecting its detection performance. Please put the detector outdoors in a cool ventilated place.

Q: Why is the PM2.5 reading constantly changing?

A: As PM2.5 concentration in the environment is changing all the time not only due to environment factors like changes in airflow, humidity, wind direction and etc. but also due to common pollutant sources like smoking, cooking; exhaust emissions from vehicles, smoke from burning coal/chimneys/furnaces and etc. All these may influence the PM2.5 concentrations and give differences in the readings.

Q:Which reference standards have been used to indicate the pollution levels?

A: Reference Standards for Particles and CO_2 are showing below.

Status / Pollutant	Good	Moderate	Unhealthy for Sensitive Groups	Unhealthy	Very Unhealthy	Hazardous
PM2.5 ($\mu g/m^3$)	≤12	12.1~35.4	35.5~55.4	55.5~150.4	150.5~250.4	≥250.5
PM10 ($\mu g/m^3$)	≤54	54.1~154	154.1~255	255.1~354	354.1~424	≥425
CO_2 (ppm)	≤700	701~1000	1001~1500	1501~2500	2501~5000	≥5001

What's Included

Detector   x 1
USB Cable   x 1
User Manual   x 1

Warranty

Temtop warrants the included item for 1 year from the date of original purchase. The item can be exchanged or returned within 30 days if the defect is not caused by artificial damage.)

Item	Warranty Period	Service Mode
Detector	1 year	Send to us
Accessories	N/A	N/A

Before returning or sending for repair, please check if the following items are ready:

	Detector & Accessories	Complete Package	Proof of Purchase*	Gift (if any)
Return	√	√	√	√
Exchange	√	√	√	
Repair	√		√	

* Including invoice, order number etc.

Temtop warranty does NOT include:

- Malfunction or damages caused by artificial damage or modification
- Other deliberate damages.
- Damages caused by force majeure events.

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