



**P20**

**Laser Particle Air Quality Detector User Manual**

## Air Quality Key Factors



**PM2.5** (Particulate Matter 2.5) refers to fine particles with 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.

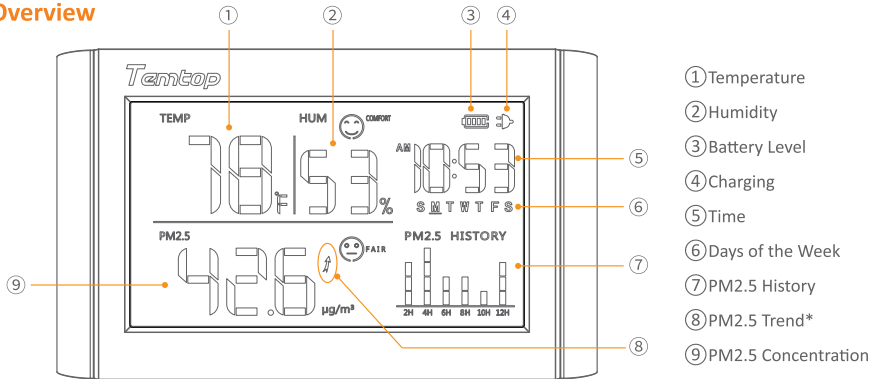


**Temperature & Humidity** may often be ignored however they do have significant impacts on individual's wellbeing, comfort, health and safety as well as your valuable goods. While high humidity may lead to increased household air pollutants especially the biological contaminants such as molds, bacteria, viruses, fungi and dust mites; cold, low humidity may cause nosebleeds, skin and respiratory irritations, dyspnea, static electricity shocks and etc.

## Warning!

- ★ Do not place the detector in a highly polluted environment (particle concentration  $> 500\mu\text{g}/\text{m}^3$ ) for a long time; or it may cause damages to the sensor.
- ★ Do not cover the air inlet/outlet during detections; or let fluff or hair enter the detector.
- ★ Do not use detector in humid places or environments with strong odor to maintain accuracy.
- ★ Do not disassemble the detector or change its internal wiring to avoid potential damages.
- ★ Do not use the detector in direct sunlight or facing air conditioner outlets and etc.
- ★ If battery level shows  , please charge the detector promptly to avoid effects during use (chargeable when turned off).
- ★ Do not change the “**system**” file of the detector or it will cause abnormal and malfunctions.  
The file is for testing and maintenance by authorized engineers and personnel ONLY.

## Overview





### **Min/Max** Switch Min/Max; Decrease Value

- Press to view the Min/Max values of temperature, humidity and PM2.5 concentration in 12 hours.
- In time setting mode, press to decrease the value, press and hold to decrease quickly.

*Note: The Min/Max values will show within a few minutes after power on.*

### **°C / °F** Switch °C/°F; Increase Value

- Press to switch temperature units °C and °F.
- In time setting mode, press to increase the value, press and hold to increase quickly.

### **Set** Setting; Switch; USB Mode

- Press to enter time setting mode, press again to switch for the next digit and etc.
- Connect detector to the computer via USB cable; then press and hold for 2s to enter the USB mode.

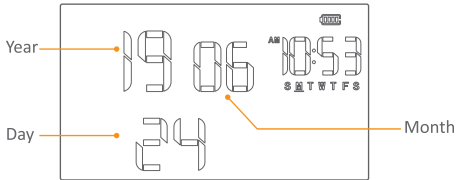
### **Power** ON/OFF; Confirm

- Press and hold for 2s to turn on/off the detector.
- In time setting mode, press to confirm and save all changes.

## Operation

### ① ON/OFF

- Press and hold button **Power** for 2 seconds to turn on/off the detector. After turned on, it will count down for 3 seconds and then display normally.



### ② Time Settings

- Press **Set** button, **Year** will flash first. Press **Min/Max** or **C / F** button to decrease or increase to the correct year; press and hold to quickly decrease or increase the values.
- Press **Set** button to switch for the next digit. Repeat previous step to set the month, day, AM PM, hour and minute (days of week will auto adjust based on others).
- Press **Power** button to save all settings and return to main page (auto exit after 10 seconds of inactivity and all changes will NOT be saved).

### ③ Temperature, Humidity, PM2.5

- Press **C / F** button to switch between temperature units °C and °F.
- Press **Min/Max** button to display the maximum temperature, humidity and PM2.5 concentration within 12 hours.  
Press again to display their minimum values (auto exit after 10 seconds of inactivity).

Please see figures shown below:

Max:



Min:



### ④ Data Management

- Connect the detector to the computer via USB cable; then press and hold **Set** button for 2 seconds to enter the USB mode. Please see figures shown below:



- The detector will generate a removable storage device **Temtop** disk including two folders: **History** and **System**.
- 1. **History** folder: the .csv format file that contains average temperature, humidity and PM2.5 data on an hourly basis. Please save it to your computer for further view.
- 2. **System** folder: the system file that used for testing and maintenance ONLY. Users are forbidden to change it or it may cause abnormal or malfunctions of the detector.
- After viewing and copying data, press and hold **Set** button for 2 seconds to exit the USB mode.

## Specifications

- Model: P20
- Dimensions: 260 x 139 x 33 mm  
6.9 x 2.6 x 1.2 in.
- Battery capacity: 3000mAh
- Battery voltage: 3.7VDC
- Battery life: 6-8h on a full charge
- Input voltage/current: DC5V; 1A
- Operating environment: 0-50°C (32-122°F); 0-90%RH
- Atmospheric pressure: 1 atm standard atmosphere
- Temperature  
Measuring range: 0-50°C (32-122°F)  
Accuracy:  $\pm 1^{\circ}\text{C}$  ( $\pm 1.8^{\circ}\text{F}$ )
- Humidity  
Measuring range: 0-90%RH  
Accuracy:  $\pm 5\% \text{RH}$
- PM2.5  
Sensor: Laser particulate matter sensor  
Measuring range: 0-999 $\mu\text{g}/\text{m}^3$   
Resolution: 0.01 $\mu\text{g}/\text{m}^3$  (0-9.99 $\mu\text{g}/\text{m}^3$ )  
0.1 $\mu\text{g}/\text{m}^3$  (10-99.9 $\mu\text{g}/\text{m}^3$ )  
1 $\mu\text{g}/\text{m}^3$  (100-999 $\mu\text{g}/\text{m}^3$ )  
Accuracy:  $\pm 10\mu\text{g}/\text{m}^3$  (0~100 $\mu\text{g}/\text{m}^3$ )  
 $\pm 10\%$  (100-500 $\mu\text{g}/\text{m}^3$ )

## Frequently Asked Questions (FAQs)

Q: Why is the PM2.5 reading not matching with the government departments' or other organizations'?

A: The PM2.5 data computed by government departments or other organization are the average data values from multi-monitoring points. Hence it is common that the PM2.5 reading at your place/location is different from theirs.

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

A: As PM2.5 concentration in the environment is changing all the time. That 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, etc. All these may influence the PM2.5 concentration and give differences in the readings.

Q: How to understand the changes in PM2.5 HISTORY area?

A: This area shows the changes in PM2.5 concentration over the last 12 hours in a histogram; wherein, the x-axis indicates time and the y-axis indicates concentration: higher the PM2.5 concentration, higher the y-axis (up to 4 segments).

Q: Why is the data reading unstable?

A: As airflow in the environment is changing and the distribution of organic matter concentration may be uneven. Temtop recommends you to try again in low airflow areas.

Q: How to read face icon on the display?

A:

| PM2.5 (μg/m³) |                                                                                   |             | Humidity (%RH) |                                                                                     |       |
|---------------|-----------------------------------------------------------------------------------|-------------|----------------|-------------------------------------------------------------------------------------|-------|
| GOOD          |  | 0<C<12.1    | COMFORT        |  | 30-60 |
| FAIR          |  | 12.1≤C<55.5 | WET            |  | >60   |
| POOR          |  | C≥55.5      | DRY            |  | <30   |

## What's Included

P20 Laser Particle Detector x 1

USB Cable x 1

User Manual x 1

Seamless Nail x 4

Seamless Nail Label x 1



## Warranty

Temtop warrants the included detector 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 |
|-------------|-----------------|
| Detector    | 1 year included |
| Accessories | N/A             |

Before return or delivery 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 and etc.*

Temtop warranty does NOT include:

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



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