TC-520 Air Quality Detector

Features:

1. Use the absorption principle of infrared light source to detect the concentration of carbon dioxide.
2. 3.2-inch TFT full color display.
3. PM2.5 can detect the quantity and concentration of 0.3um, 0.5um, 1.0um, 2.5um, 5.0um, 10um particle size dust through the principle of laser scattering, AQI detector.
4. Temperature and humidity detection.
5. Record the time and date in real time.
6. 999 groups of data records, trend graph, can measure the interval time of data records.
7. Rechargeable lithium battery or separate external USB power supply.
8. The service life of the sensor is more than 10 years.
9. High-precision sensors and imported chips.

Specifications:

CO2 concentration measurement range	0-10000PPM
CO2 concentration resolution	1PPM
Accuracy	±70PPM ±3% of reading
PM2.5 measurement range	0-1000G/m3
Accuracy	±10%@100~500 μg/m3 ±10 micrograms/cubic meter@0~100 micrograms/cubic meter
PM2.5 resolution	1G/m3
PM2.5 six channels	0.3/0.5/1.0/2.5/5.0/10um
range of working temperature	-10~+60 ℃/℉
Working humidity range	0~99%
Storage temperature range	-40~+80 ℃/℉
Temperature measurement range	-20~60℃/℉
Temperature measurement accuracy	±2℃/℉
Temperature resolution	0.01℃/℉
Humidity measurement range	0~100%RH
Temperature accuracy	±3%RH
Humidity resolution	0.01%RH
Power supply battery	Built-in removable 3.7V/18650 cylindrical battery or external 5V USB power supply
Working current	180mA
Battery working hours	2000mAh can work continuously> 6 hours
Charging time	3 hours
Automatic shut-down	Can be set
Number of record groups	999 groups
Net weight	240g
size	140*134*33mm

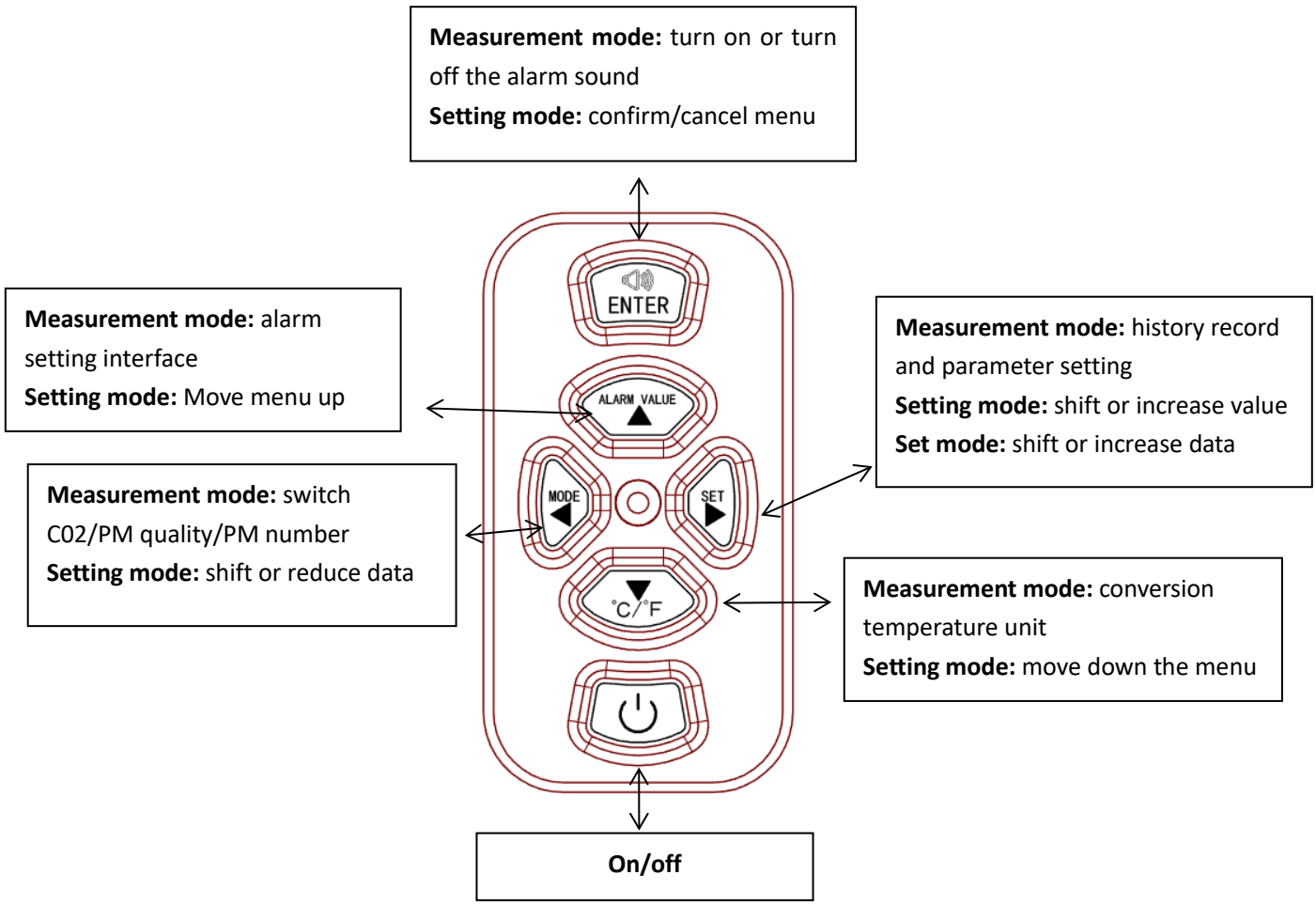
Structure Appearance:

Function:

1. Display screen
2. Operation buttons
3. USB interface
4. Airflow window ①
5. Label sticker
6. Battery compartment
7. Airflow window ②
8. Airflow window ③

Note: 1. Do not block the airflow window with objects during the test.

Key Function:



Operation description:

(Reminder: Please do not operate the calibration equipment parameters at will, so as not to cause data detection errors or inaccuracy)

Power on or off Short press the button once to  turn on or off.

Measurement mode conversion Short press the button once to  switch to C02/PM quality/PM number in turn, the interface conversion is completed.

Temperature unit conversion Short press the button once to  switch ℃/℉.

Alarm sound on or off In measurement mode, after the set alarm value is exceeded, you can press the button once to  turn on or turn off the alarm sound.

Alarm setting:

In measurement mode, press the  key, the alarm setting interface appears, press the left and right keys to move the value, press the up and down keys to add or subtract the value, press the  key to save and exit the alarm value setting Data logging interval time.

Short press  the button twice to enter the function parameter setting, the up and down buttons can select the corresponding parameters, the left and right buttons to enter the setting parameters, press the  button. OK and return.

History query:

Press the  button once and press  the button to enter the <History>, the left and right buttons shift, the up and down buttons modify the record page,Carbon dioxide data calibration: (Note: This step requires 400PPM calibration in a sunny and well-ventilated environment).

Press the  button twice and press  the button to enter the <function parameter>, press  the button to move to select [calibration equipment], press the left and right buttons to enter the 600-second countdown calibration start.

Steps of entering the function parameter setting:

Press the 

button twice and press 

the button to enter the <function parameter>, press the up and down buttons to move to select the corresponding parameter, the background color of the selected item will turn white, and the left and right buttons can modify the parameters. After modifying the parameters, press 

the button <function parameter> and the white color disappears, and press 

the button to return to the main test interface (the following table 1 and table 2 follow this step to enter the function setting).

Parameter setting: Backlight setting: press the left button to decrease the brightness of the backlight, press the right button to increase the brightness of the backlight, press 

the button to exit the modification after completion, press 

(the right button) again to return to the main measurement interface.

Clear records:

press the left and right buttons to enter, select Yes (left button) and press 

the button to exit the modification, press again 

(right button) to return to the main measurement interface.

Shutdown setting: press the left button to decrease the time, press the right button to increase the time, press 

the button to exit the modification after finishing, press (the right button) again to return to 

the main measurement interface.

Recording interval: Press the left and right buttons to enter. At this time, you can press the up and down buttons to select the required interval time. After completion, press 

the button to exit the modification, and press 

(the right button) again to return to the main measurement interface.

Calibration equipment:

Press the left and right buttons to enter the calibration mode and count down for 600s. After the countdown is completed, it will automatically return to the main measurement interface. You can press 

the right button to cancel the calibration within 600 seconds.

Language selection:

Press the left and right buttons to switch between Chinese and English interfaces, press 

the button to exit the modification after completion, and press 

(the right button) again to return to the main measurement interface.

Factory setting:

press the left and right buttons to enter, select Yes (left button) and press 

the button to exit the modification, press again 

(right button) to return to the main measurement interface.

Carbon Dioxide concentration level:

400-450PPM (Excellent): The usual outdoor air level.
450-700PPM (good) typical value in a well-ventilated living space.
700-1000PPM (slight pollution) poorly ventilated living environment.
1000-2000PPM (moderately polluted) air level that is insufficient, drowsy, and enough to cause complaints.
2000-5000PPM (heavy pollution) stagnant, stale, sultry air level. It causes headaches and drowsiness, accompanied by lack of concentration, decreased concentration, rapid heartbeat, and slight nausea.
Exposure to more than 5000PPM (severe pollution) may cause severe hypoxia, resulting in permanent brain damage, coma or even death.

PM2.5 Concentration Level (mg/m3):

Excellent: 0-35
Good: 35-75
Light pollution: 75-115
Moderate pollution: 115-150
Severe pollution: 150-250
Serious pollution: 250-500

Common Problem Analysis:

1. Inaccurate data on the concentration of carbon dioxide in the air

   Analysis 1: The concentration and content of the environment itself are not stable, keep it in the same place for a period during measurement

   Analysis 2: There is debris, dirt in the sampling window of the carbon dioxide sensor, and the airflow ventilation window is blocked by something.

   Analysis 3: The carbon dioxide sensor has a deviation, and the equipment needs to be recalibrated

2. Inaccurate temperature and humidity

   Analysis 1: Analysis of debris and dirt in the temperature and humidity sensor sampling window.

   Analysis 2: The ventilation window is blocked by something

3. Inaccurate date and time

   Analysis 1: The button battery inside the device is too low.

4. Doesn't boot

   Analysis 1: If the battery is dead or damaged, use the USB socket to supply power. If it can be turned on and there is a change in the power grid in the upper right corner, the battery is dead. If there is no change, only the OK icon is displayed, indicating that the battery is damaged.

   Analysis 2: The +/- polarity of the battery is reversed. Please note that the battery without a protruding contact point is the "-" pole, and the one with a protruding contact point is the "+" pole.