Operating Instructions

Air negative (oxygen) ion detector

24-03-V1-7800

Brief description

The Detector is used to test all kinds of large, medium and small ions of negative polarity in the air, temperature and humidity, with high precision, accurate measurement, high sensitivity, strong environmental adaptability, and long continuous working time. The negative ion tester adopts the capacitive inhalation method to detect negative ions in the air. The shell is made of high-grade aluminum alloy, which is durable and beautiful.

Function Description:

- Support 3.5-inch TFT large-screen HD display
- Support negative ion test
- Negative ion test range: 0 to 90,000,000 PCS/CM3
- Test content: ION/PM2.5/PM1.0/PM10/HCHO (Formaldehyde)/Temperature/Humidity
- PM2.5 test range: (0-999 ug/M³)
- HCHO test range: (0.001-1.999Mg/M³)
- Built-in large-capacity lithium battery
- Support time and date display

Note: If it is not used for a long time, turn off the power first, and then pull out the plug and cable. Avoid places with strong sunlight and places with high temperature for a long time. Do not let children touch them to avoid danger.

Appearance:



Key Description:

1: Charging input port (DC5V 2.4A)
2: Calibration key, press this key the instrument will automatically adjust the zero calibration.
3: On/off button, press this button to enter the power on



or off function, press three times to enter the setting mode.
4: Mode key, two modes selection, 1st gear 0-200,000 2nd gear 0-90,000,000
5: Air inlet
6: Fan output

Interface description:



Instructions:

Test operation:

In the power-on mode, the test is automatically performed after the instrument is turned on for more than 2 to 3 minutes and the instrument enters a stable period. Data analysis includes negative ion, PM2.5, PM1.0, PM10, formaldehyde, temperature and humidity, which are displayed as real-time data:



On/off operation:

Press and hold the "On/Off" button, Device will automatically enter the boot



In any mode, the device will shut down after long pressing the "On/Off" button for 3 seconds.

Shift operation:

Shift operation: If our current number of negative ions is less than 200,000, we will test with the first gear, and if our current number of negative ions is more than 200,000, we will test with the second gear. Note that if you use second gear testing the low concentration of negative ions, the error of the test data will increase.

Time setting:

In the power-on mode, pressing the "On/Off" button 3 times quickly will enter time setting:
1: The year will change to red font. Press "Calibration key" or "Mode key" to adjust the year. Then press the "On/Off" button to confirm and auto enter month setting.
2: The month will change to red font. Press "Calibration key" or "Mode key" to adjust the month. Then press the " On/Off " button to confirm and auto enter date setting.
3: The date will change to red font. Press "Calibration key" or "Mode key" to adjust the date. Then press the "On/Off " button to confirm and auto enter is the hour setting.
4: The hour will change to red font. Press the"Calibration key" or "Mode key" to adjust the hour. Then press the " On /Off " button to confirm and auto enter minute setting.
5: Minutes will change to red fonts. Press "Calibration key" or "Mode key" to adjust the minutes. Then press the " On/ Off " button to confirm and auto enter second setting.
6: Seconds will change to red font. Press "Calibration key" or "Mode key" to adjust seconds. Then press the " On/Off " button to confirm. Then time setting complete.



Charging:

If the built-in lithium battery has run out, please plug in the power adapter to charge. During charging, the battery symbol will flash on the LCD. When fully charged, the battery symbol will not flash and the battery is full.
Note: (The power adapter is AC: 220V DC: 5V 2.4A)

Precautions for negative ion detector:

1. When measuring, keep the air relatively still and not flowing, and the measuring person should stay away from one arm or so.
2. When the battery power is low, it need to be fully charged. Under normal circumstances, the battery usage time is about 5-6 hours, otherwise the measurement results will produce a large error in low power.
3. The data value should take the middle reading of the numerical range that appears.

Negative ion level description:

The concentration distribution of air anion in the natural ecological environment is as follows.

unit: per cubic centimeter

Environmental location	Concentration distribution	Environmental location	Concentration distribution
Forest waterfall	Over 10000	City Park	500-1000
Alpine seaside	5000-10000	Urban greenbelt	300-500
Torrent fountain	2000-5000	Urban residence	50-100
Suburban fields	1500-2000	Air-condition	0-50
Suburban Park	1000-1500		

Technical Parameters:

Dimensions: 18.6*11*4.1CM
Working temperature: -10℃ to +50℃
Input specification: 5V/2.4A
Charging interface: DC5.5X2.1mm
Screen: 4.3 inch FTF
Display pixels: 480*3RGB*320
Display mode: 16:9
Working humidity: 10-90%RH
Battery capacity: 5000mAh

Negative ion technical indicators
Measuring range: first gear: 0-200,000 PCS/CM3
Second gear: 0-90,000,000 PCS/CM3
Measurement accuracy: ±15%
Resolution: 1PCS/CM3
Measuring principle: capacitive inhalation method

Technical index of temperature and humidity
Measuring range: -10℃ to +50℃
Humidity range: 0-99%RH
Measurement accuracy: ±1℃
Measurement accuracy: ±10%R

Air Quality Standard
Formaldehyde
Less than 0.100 safety range
0.101-0.200 Slight pollution
0.201-0.300 Moderate pollution
0.301 or more heavy pollution

PM2.5 Air Quality Rating Range	
Air Quality Level	PM2.5(ug/m³) Average Standerd Value
Excellent	0~35
Good	36~75
Light pollution	76~115
Moderate pollution	116~150
Heavy pollution	151~250
Serious pollution	more than 250

What is anion

Negatively charged particles are called negative ions. When molecules or atoms in the air lose or gain electrons, they form charged particles called ions, such as sodium ions Na+; charged atomic groups are also called "ions", such as sulfate ions. Certain molecules can also form ions under special circumstances. Negative ions, also known as negative (oxygen) ions, refer to the oxygen ions that get one or more electrons negatively charged. The main components of air are nitrogen, oxygen, carbon dioxide and water vapor. Nitrogen accounts for 78%, oxygen accounts for 21%, and carbon dioxide accounts for 0.03%. Nitrogen has no affinity for electrons, and only oxygen and carbon dioxide have affinity for electrons. However, the oxygen content is 700 times that of carbon dioxide, so most of the negative ions generated in the air are air negative oxygen ions. It is formed by the combination of free electrons with oxygen molecules in the air. Discharge (lightning) phenomena, photoelectric effects, fountains, waterfalls, etc. in nature can ionize the surrounding air to form negative oxygen ions. Air negative (oxygen) ions are negatively charged single electrons and combined with other neutral molecular groups to form negatively charged particles. Negative ions are divided into large particle size, medium particle size, and small particle size. Small particle size is beneficial to human health In general, only the study of small particle size is concerned. In natural ecosystems, forests, waterfalls and thunderstorms are important places to generate (negative) oxygen ions.