PCE CE-MPC 20 Particle Counter User Manual

Particle Counter
CE-MPC 20
User Manual

Please read this manual before switching the until on.
Important safety information inside.

Contents

Introduction

Thank you for purchasing this 4 in 1 Particle Counter instrument. This instrument is Particle Counter with 2.8″ color TFT LCD display. Proving fast, easy and accurate readings for particle counter, air temperature & relative humidity, most surface temperature measurements. It would be the best instrument for environmental protection and energy save. The dew-point temperature measurement will be very visible for wet and dry proof.It is a good hand industrial measurements and data analyzing, the real scene and time can be displayed on color TFT LCD.Any memory readings can be recorded in memory.The user can be back in office to analyze the measured air quality under the support of software.

PM2.5 fine particulate matter that is

Fine particles are known as fine particles, fine particles, PM2.5. It refers to fine particulate matter in ambient air aerodynamic equivalent diameter less than or equal to 2.5-micron particles. He can be more time suspended in the air, the higher its content concentration in the air, on behalf of the more serious air pollution. Although the Earth’s atmospheric composition PM2.5 only a few components in the content, visibility and air quality but it has an important influence. Compared with coarse atmospheric particulate matter, PM2.5 particle size is small, large, active. easy shipped hazardous substances(for example, heavy metals, microorganisms, etc.), and the length of stay in the atmosphere, transmission distance, thus greater impact on human health and the atmospheric environment.

PM10 particles can be inhaled

PM10 is called inhalable particles or particulates, respirable coarse particulate matter refers to the ambient air aerodynamic equivalent diameter of less than 10-micron particles, PM10 ambient air very long duration, human

health and visibility Atmospheric effects are great. Part of the particulate matter emissions from direct sources, such as unpaved, cement road motor vehicles, crushing grinding process material and the dust raised by the wind and the like. Others are fine particles from the ambient air of sulfur oxides, nitrogen oxides, volatile organic compounds and other compounds interact to form, their chemical and physical composition according to location, climate, season of the year varies greatly changed.

The standard index

Fine particulate matter standards, proposed by the United States in 1997, mainly to more efficient monitoring with increasing industrialization and the emergence of well-developed, the old standard was ignored harmful fine particles. Fine particulate matter has become an important index for monitoring air pollution index of the degree. Until 2010, except the United States and some EU countries, the fine particles included in the GB and mandatory restrictions, most of the world countries have yet to carry out monitoring of fine particulate matter, mostly by PM10 monitoring.

Features

- 2.8″TFT Color LCD display
- 320*240 pixels
- Simultaneously measure and display 3 channels of particle sizes.
- Air temperature and humidity
- Dew-point & Wet-bulb temperature
- MAX, MIN, DIF, AVG record, Date/time setup controls
- Auto Power Off

Specifications

Mass Concentration	
channels	PM2.5/PM10
Mass Concentration Range	0-2000ug/m3
Display Resolution Particle Counter	1ug/m3
channels	0.3,2.5,10um
Flow Rate	2.83L/min(0.1ft3)
Counting Efficiency	50%@0.3w.m; 100% for particles >0.45iim
Coincidence Loss	5% at 2,000,000 particles per ft’
Data Storage	5000 sample records(SD Card)
Count Modes	Cumulative, Differential, Concentration
Air temperature and Relative humidity measurement	
Air Temperature Range	0 to 50°C(32 to 122°F)
Dewpoint Temperature Range	0 to 50°C(32 to 122°F)
Relative Humidity Range	0 to 100%RH
Air temperature Accuracy	-±1.0°C(1.8°F)10 to 40)C -.±-2.0t(3.6`F)others
Dewpoint temp. Accuracy	
Relative Hum. Accuracy	±3.5%RH@20% to 80% ±5%RH 0% to 20% ro 80% to 100%
Operating Temperature	0 to 50°C(32 to 122°F)
Storage Temperature	-10 to 60°C(14 to 140°F)
Relative Humidity	10 to 90%RH non-condensing
Display	2.8″320*240 Color LCD with Backlight

Power	
Battery	Rechargeable battery
Battery Life	About 4 hours continuous use
Battery Charge Time	About 2 hours with AC adapter
Size(H*W*L)	240mm*75mm*57mm
Weight	570g

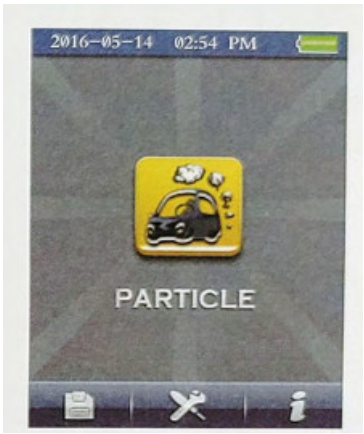
Front Panel And Bottom Description

Power on or Power off

On the power off mode,press and hold ⏻button, On the power on mode,press and hold ⏻button, until the LCD is on, then the unit will power on. until the LCD is off, then the unit will power off.

Measurement

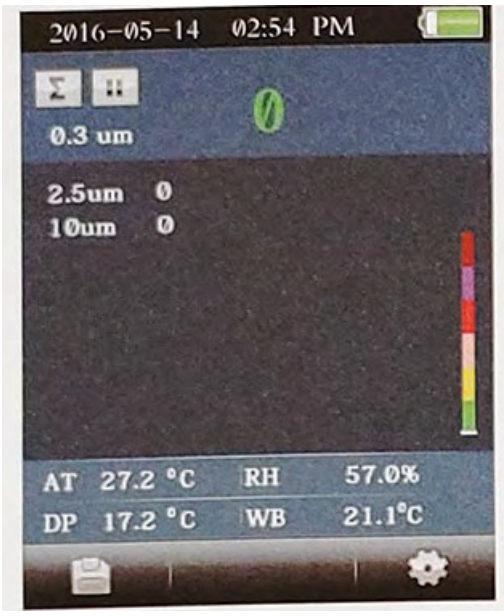
Mode This instrument has two modes On the power on mode, the unit will display the two measure modes, and display three setup options. You can use ▲or ▼ button to select any measure mode you need. and use the function buttons Fl, F2, F3 to enter the system interface.



Items	Description	Symbol	Description
	Particle Counter measurement		Cumulative mode
	Memory Set		Concentration mode
	System Set		Differential mode
	Help file		HOLD
			Scan

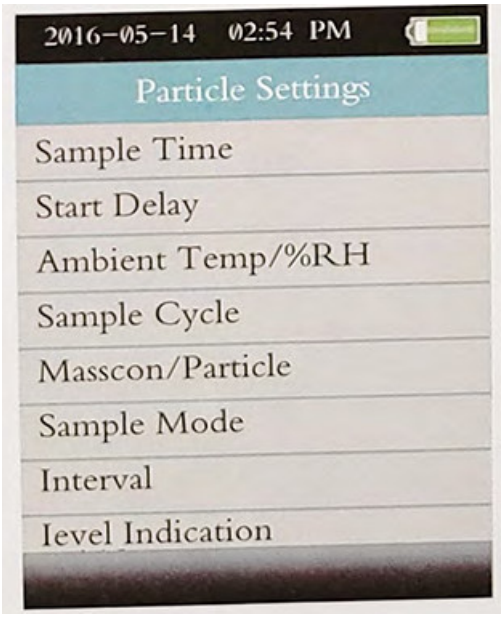
Particle Counter measurement mode

On the power-on mode, you can use the ▲or ▼ button to select Picture, then press the ENTER button to enter the Particle Counter mode, Start to measure and display temperature and humidity. Press the RUN/STOP button to start the detection of particles, when the sample time is up, the particle measurement will automatically stop, and the data will automatically save. You can also, press the RUN/STOP button to stop the measurement when the sample time is not up.



Particle Setup mode

On the particle counter mode, you can see  icon, and these icons correspond to Fl, F2, F3, press F3 can enter the Setup mode, on this mode, you can set up any parameter you wan. Use the ▲or ▼ want to coat Then press the ENTER button to confirm the parameter.



7.1.1 **Sample time**

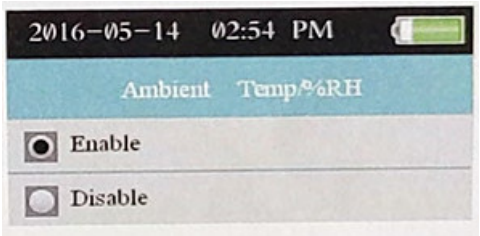
You can adjust the sample time use the ▲or ▼ button to control the volume of measured gas. It can be set to 60s/2.83L.

7.1.2 **Start Delay**

You can adjust the time use the ▲or ▼ button to control start time. The delay time of up to 100 seconds.

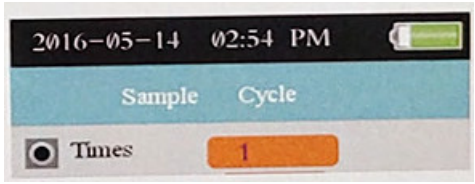
7.1.3 **Ambient Temp/TORN**

Choose this setting if the Air temperature and humidity are displayed.



7.1.4 **Sample Cycle**

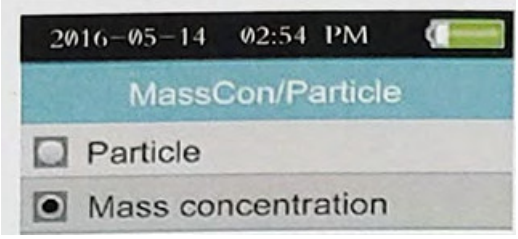
This option is used to set the sampling period.



7.1.5 **Mass Concentration/Particle**

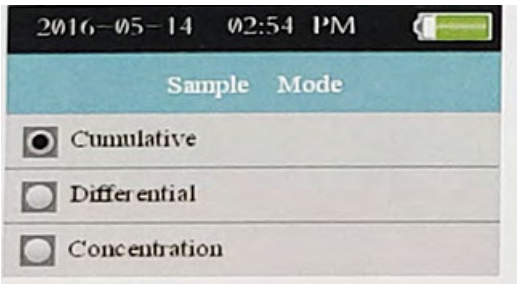
This setting is used to select the particle or mass concentration measurement mode, the use of the keys to select

the next.



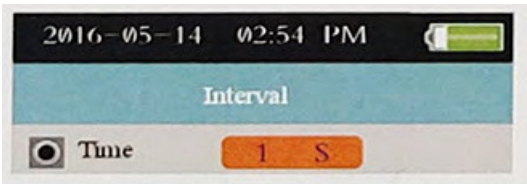
7.1.6 **Sample Mode**

This setting sets the display mode of the particle counter. When You select the cumulative mode, the particle measure will display Σ symbol and the meter work in the cumulative model. When you select the differential mode, the particle measure will display ▲symbol, and the meter work in the differential mode. When you select the concentration mode, the particle measure will **com** display a symbol, and the meter works in the concentration mode.



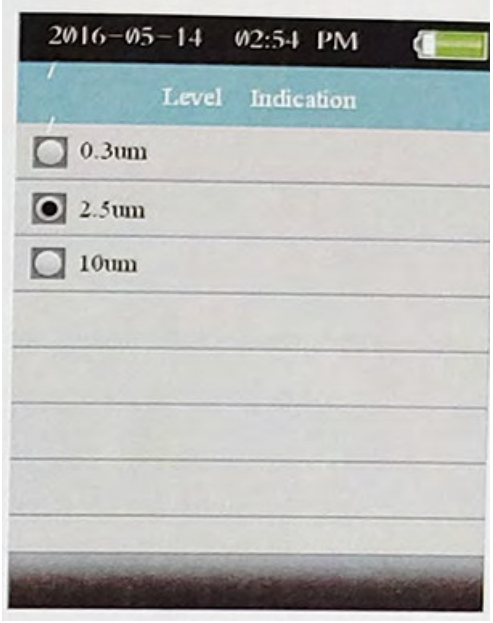
7.1.7 **Interval**

Set the time between samples for the sampling period is greater than one times. The longest interval is 100 seconds.



7.1.8 **Level Indicatio**n

Select the alarm level of the corresponding particle size in the measurement, when the selected particle size is exceeded, the instrument measuring interface will have exceeded the prompt.

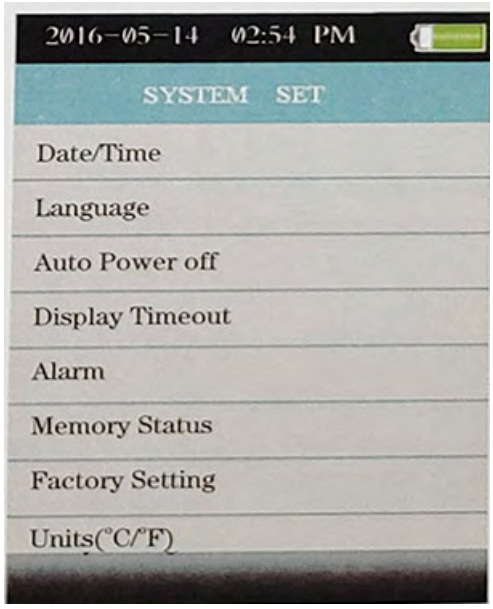


Strorage File Browser

Turn the instrument on, below the LCD has a bar icon.  Click on the  icon to enter the data memory via the Fl button. on the Memory set mode, there are three options, press  or  button to select one and press ENTER button to enter this option. and then you can view the recorded data, images, and video information. If you do not save the information, it shows no file.

System Settings

Turn the instrument on, below the LCD has a bar icon.  Click on the  icon to enter the System Set Mode via the F2 button.

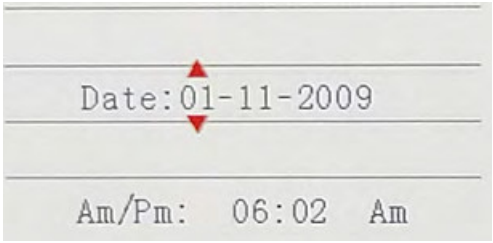


Items	Descriptions
Date/Time	Set date and time
Language	Select Language
Auto Power Off	Select auto power-off time
Display Timeout	Select display auto-off time
Alarm	Select Alarm ON or OFF
Memory Status	Display the memory and SD card capacity
Factory Setting	Restore factory settings
Units(˚CrF)	Select the temperature unit
Version:	Display Version

Press the ▲ or ▼ button to select the items, Then press the ENTER button to enter.

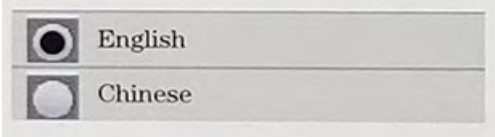
Date/Time

Press the ▲ or ▼ button to select the value, press ENTER button to set the next value, press ESC button to exit and save the date and time.



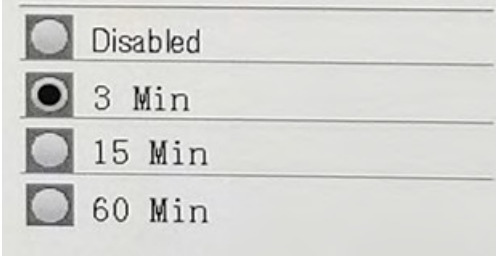
Language

Press the ▲ and ▼ buttons to select language, press the ESC button to ESC and save.



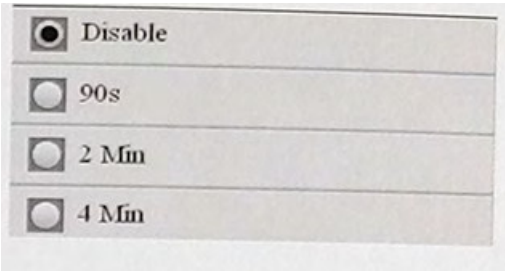
Auto Power-off

Press the ▲ and ▼ buttons to select the auto power-off time or never auto power off, press the ESC button to esc and save.



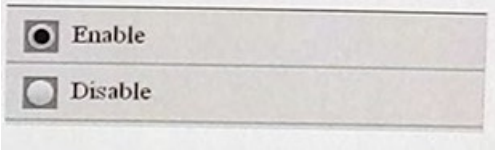
Display Timeout

Press the ▲ and ▼ button to select the Display auto off time or never Display auto-off, press the ESC button to esc and save.



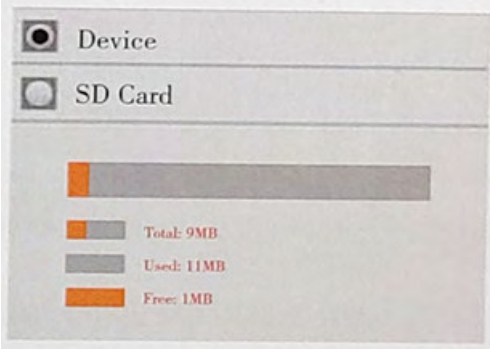
Alarm

Choose the alarm is enabled or disabled.



Memory Status

Press the ▲ and ▼ buttons to select the memory (flash or SD). Press the ESC button to esc and save.



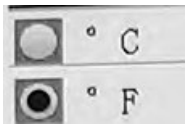
NOTE: If an SD card is inserted, SD card will be selected by default. Press the ENTER button to format the flash or SD card, press the F3 button to cancel the format, press Fl button to confirm the format.

Factory Setting

Press the ▲ and ▼ buttons to select yes or no restore factory settings. Press the ESC button to esc and save.

Units(°C/°F)

Press the ▲ and ▼ button to select the unit, press the ESC button to esc and save.



Help

File-This is 4 in 1 Particle Counter with 2.8″ color TFT LCD display. Proving fast, easy and accurate readings for particle counter, air temperature & relative humidity, most surface temperature measurements. It is the first combination of these measurements in global, would be the best instrument for environmental protection and energy save. The dew-point temperature measurement will be very visible for wet and dry proof. It is a good hand industrial measurements and data analyzing, Any memory readings can be recorded in SD card. The user can be back in office to analyze the measured air quality under the support of software.

Particle Counter instruction

1. Particles that are scattered in the dust in the air, dust or smoke. They mainly come from automobile exhaust, power plant, garbage incineration furnaces and so on. Relative diameter less than 2.5um particles known as PM2.5, this particle is smaller than human cells, not be drained, but directly into the lungs and blood, the harm to the human body is larger
2. This meter with a simple key operation to achieve a particle counter measurement, real-time monitoring the value of environmental particles concentration, six-channel data measured simultaneously, and at the same time displayed on the screen, also can be a separate display. Joined the exceed the standard grade alarm indication, and accompanied by different buzzer, more direct master of environmental quality.
3. Due to particulate matter measurements need to start the pump, will be dust inhalation, is recommended for daily useless as far as possible, to reduce the pollution on the sensor, thereby increasing the service life of the instrument, such as the average daily use 5 times, the instrument can be used for 5 years.
   Attention: in the foggy there will be tine mist as dust!

Product Maintenance

1. Maintenance or service is not included in this manual, the product must be repaired by professionals.
2. 1t must use the required replacement parts in maintenance.

3. If the operating manual is changed, please instruments prevail without notice.

Cautions

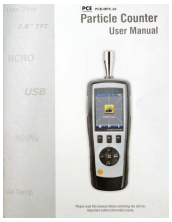
1. Do not use in an over dirty or dusty environment. Inhalation of too many particles will damage the product.
2. To ensure the measuring accuracy, please do not use in an over fogged environment.
3. Do not use in an explosive environment.
4. Follow the instructions to use the product, privately take apart the unit is not allowed.

Attach 1:
Air quality new standards

Air quality levels	24 hours average of the standard values	
	PM2.5(ug/m3)	PM10(ug/m)
Good	0~1Oug/m^3	0 ~2Oug/m^3
Moderate	10 ~35ug/m^3	20 ~ 75ug/m^3
Lightly Polluted	35~75ug/m^3	75 ~15Oug/m^3
Moderately Polluted	75 ~15Oug/m^3	150 ~300ug/m^3
Heavily Polluted	150~20Oug/m3	300 ~ 400ug/m^3
Severely	>20Oug/m3	>40Oug/m^3

World Health Organization(WHO)2005 year<air quality guidelines>				
Project	PM2.5(ug/m3)			PM10(ug/m3) Daily average
	Annual average	Daily average	Annual averag e	
Transition period g oals 1	35ug/m3	75ug/m3	70ug/m3	150ug/m3
Transition period g oals 2	25ug/m3	50ug/m3	|50ug/m3	|75ug/m3
Transition period g oals 3	15ug/m3	37.5ug/m3	3Oug/m3	|75ug/m3
Guideline value	10ug/m3	25ug/m3	|20ug/m	5Oug/m3

Documents / Resources

	**PCE CE-MPC 20 Particle Counter** [pdf] User Manual CE-MPC 20 Particle Counter, CE-MPC 20, Particle Counter