



MOC 320 is a measuring instrument which counts the number of the ion in the air.

MOC 320 is a portable air ion counter based on JIS which adopted the Gerdien capacitor method. It can measure from the minute ion which exists in nature to the ion of an ion generator.

It can be connected to a PC output. Since it can operate with a built-in battery for a long time, it is the optimal product for outdoor observations.

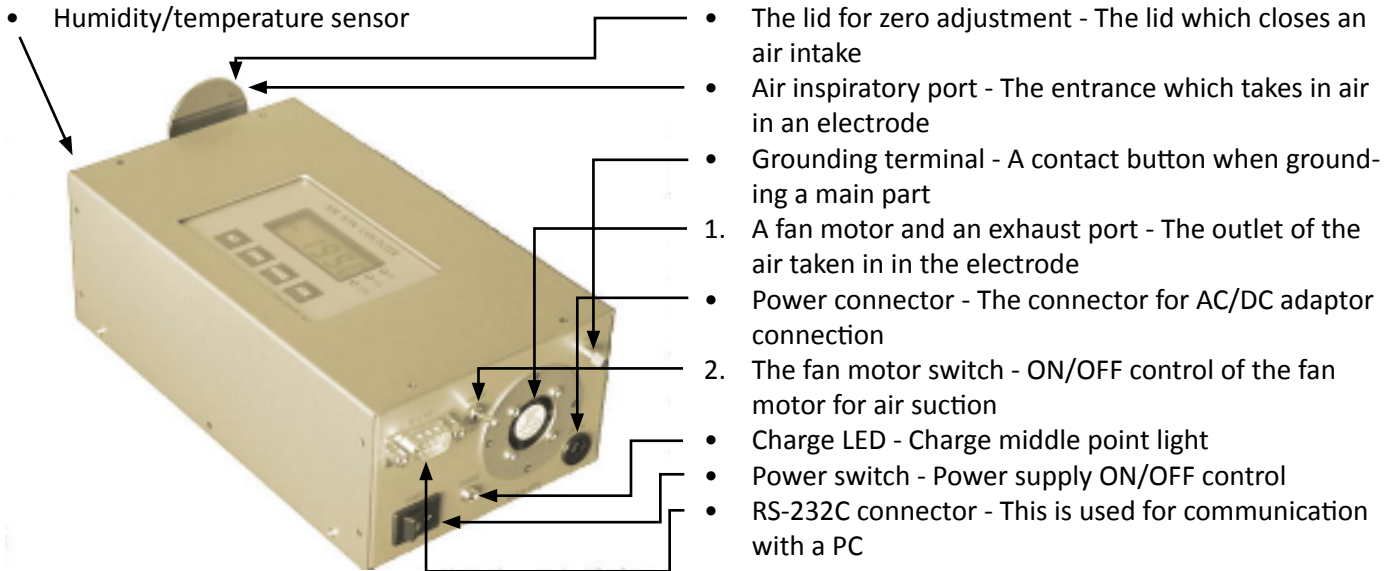
at the liquid crystal, the measured value is in a standby state rather than at its normal value.

9. Please do not remove the connection of various cables during the operation of a measuring instrument as this will cause the measuring unit to malfunction.
10. When the indication on the display changes or disappears, please turn off the power, and then turn it on again.

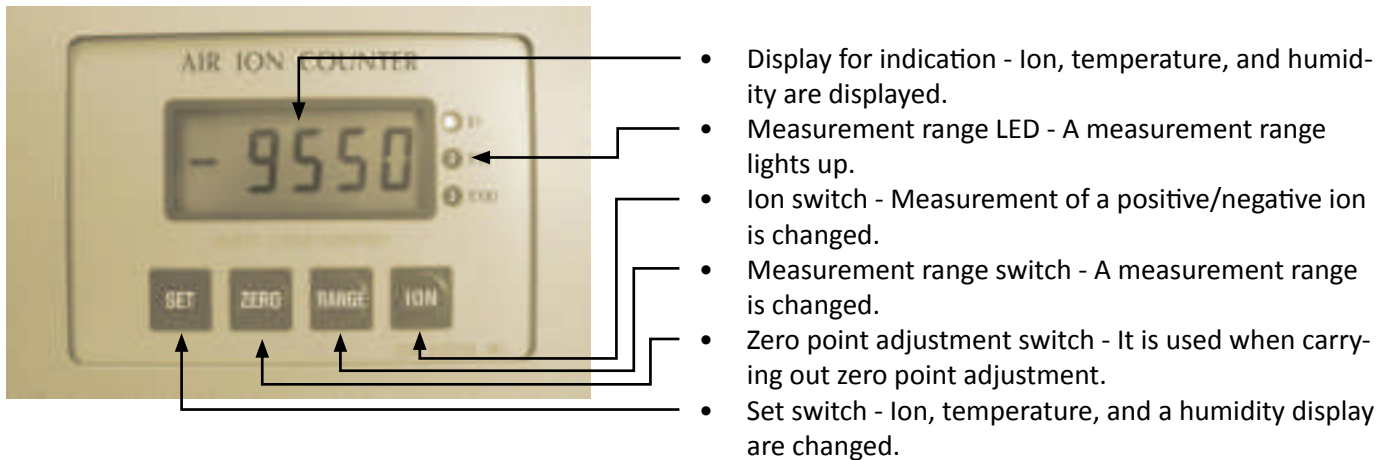
Cautions when using an air ion counter

1. Please keep in mind that this product will break if supplied with power other than the specified one.
2. An air ion counter takes in and measures air. Tobacco smoke will be taken in if the measurement takes place in a room with much tobacco smoke. Tobacco tar adheres to an insulator and will affect the result of the ion count.
3. If moisture enters the system, waterdrops will adhere to electrode insulators and the insulation properties will decrease. This results in an erroneous and poor measurement result. If affected by moisture, let it run for a while in order to make it dry.
4. When you measure powder, such as ore, please place the unit in a bag and keep the powder from entering into the measuring instrument. Otherwise it will affect the measured value.
5. When you start measuring, please measure after turning on the power switch and allow about 10 minutes to pass. It takes some time for the measured ion value to stabilize.
6. Please make zero point adjustment after starting measurement and waiting for the ion measurement value to stabilize.
7. The unit is affected by temperature and humidity outdoors especially in the first measurement range. If, during measurement, there is a significant change of temperature and humidity, a zero point adjustment should be made again.
8. At the beginning of the measurement and during measurement changes, while doing the '----' display

1. The name and function of each part



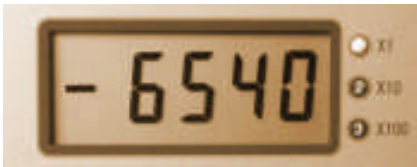
Front panel



2. The view of the display for indication

An ion display, a temperature display, and a humidity display is chosen by pressing a button to change the [SET] switch.

While displaying temperature and humidity, range LED is all turned on.



Ion display

-6540 ① x 1 Negative ion 6540 piece/cc

- example 1: -470 ×10 Negative ion 4700 piece/cc
- example 2: +470 ×100 Positive ion 47000 piece/cc

- Display: Negative ion, + Display: Positive ion



Temperature display

Display T-18 : 18° C

Time based range of Temperature: 0~50° C

Accuracy: 1.0° C

Measurement resolution: 0.1° C (PC output)



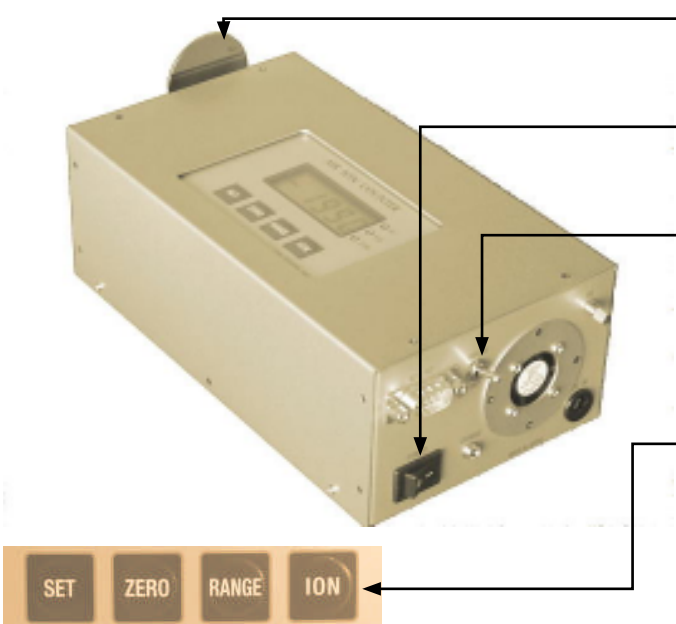
Humidity display

Display T-61: 61%

Time based range of humidity: 0~100% Accuracy: 5%

Measurement resolution: 1%

3. Starting the Ion Measurement.



1. The screw of the lid for zero point adjustments is removed, and a zero point adjustment lid is removed.
2. A power switch is pressed and the power supply is switched on.
3. A fan motor switch is turned on and a fan is operated.
4. Ion measurement is started. An ion measurement initial value is set as negative ion.
5. The [ION] switch is pressed to measure positive ions.
6. When measuring small ions correctly by R1 (range 1), please start measurement after allowing about 10 minutes to pass, then make zero point adjustment.

4. Measurement Range



Pressing [RANGE] changes the measurement range.

Range display LED also changes.

R1 ① ⇌ R2 ② ⇌ R3 ③ ⇌ R1 ① ⇌ R2

When a power supply is switched on, a measurement range is automatically set as R1.

Measurement range display of the front panel:

R1 = ① x 1, R2 = x 10, R3 = x 100

1. The numerical value displayed on the display for indication is multiplied by range magnification, and an ion value is shown.

Time based range:

R1= 0 ~ 20,000 ions/cc

R2= 0 ~ 200,000 ions/cc

R3= 0 ~ 2,000,000 ions/cc

Resolution:

10 ions/cc

The display range of a display for indication:

R1= 0 ~ 19,990 ions/cc

R2= 0 ~ 199,900 ions/cc

R3= 0 ~ 1,999,000 ions/cc

When each range is overscale, it is displayed as 19,999.

Zero point adjustment value: 20,000 or less may be the overscale value at the time of R1. Be careful!

5. Charge Method

The boost charge circuit is integrated in the main unit, and charge is completed at a maximum of 4 hours.

The charge method turns OFF a power switch, connects to an AC/DC adaptor, which supplies power.

A CHARGE LED lights up and charge begins. Charge will be completed if the CHARGE LED disappears.

Operating time is about 8 hours, when a negative ion is measured. When operating and using an AC/DC adaptor, the CHARGE LED blinks.

6. Zero Point Adjustment

1. [ZERO] A switch is pushed for 2 seconds or more.
2. This is the downcount display from 30 secs to a display indication.
3. A fan motor switch is turned OFF and it stops.
4. The lid of zero adjustment is closed.
5. The end of a downcount will display ion data. It waits to stabilize the ion measured value.

[SET] A switch is pushed.

[ZERO] A switch is pushed.

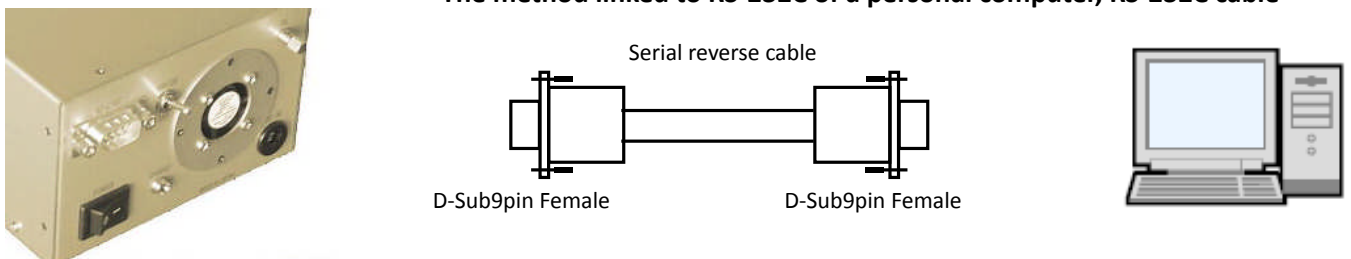
The lid for zero adjustment is removed.

A fan motor switch is turned ON and ion measurement is started.

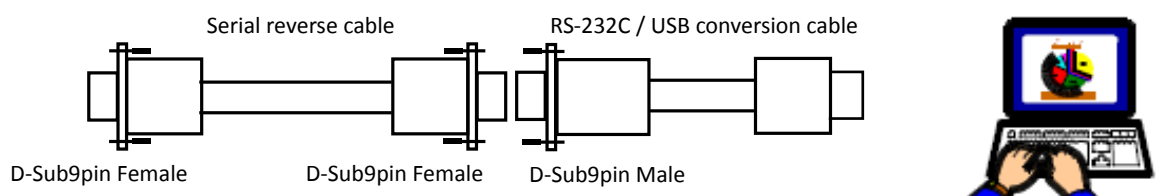
7. Using a Personal Computer

For indicating the ion measurement data the enclosed PC software should be used. A RS-232C connector and a personal computer are connected by the method shown below. A connecting cable is not among the accessories. Please purchase a commercial item.

The method linked to RS-232C of a personal computer, RS-232C cable



The method linked to USB of a personal computer, RS-232C cable



- Purchase and use RS-232C / USB converter to install a driver.
- A cable is connected to the RS-232C connector of MOC-320, and the RS-232C connector of a personal computer.
- Personal computer ⇄ MOC-320 Please switch on a power supply in order.
- When removing a cable. MOC-320 ⇄ personal computer
- Please remove the cable after first having turned off the power.

8. Other Specifications

- Measuring method:
Gerdien capacitor method
 - The zero point adjustment method:
The software zero point adjustment method
 - Display for indication:
7 segments 4 + 1/2 figure LCD
 - Operating temperature limits:
+5° C ~ 35° C
 - Operating humidity limits:
85%RH Following (don't dew)
 - Power supply:
Two power supply systems, AC100 V~ AC 240V
and built-in charge battery
 - Main part size:
70 x 110 x 188 mm
 - Main part weight:
About 1.5 kg
 - Product components:
MOC-320, AC/DC adaptor(AC100 V~ AC
240V), Operation manual, Zero point
adjustment lid, Rubber leg (4 pieces)
- crack in the cable may start a fire or give rise to an electric shock.
- This machine should withstand explosions. If inflammable gas has leaked out, please do not use it.

Warning

- Please do not use AC/DC adaptors other than those specified.
- Do not leave the unit in your car in the summer time since high temperature will destroy the electronic circuit as well as the film on the panel.
- Underwater measurement cannot be performed. This unit does not exist in a waterproof structure.
- When you extract a power cable and a RS-232C cable from a connector or an electric socket, please first remove at the PC connector area.
- When nasty smells, high temperature, smoke, or an unusual sound come from the main unit and an AC/DC adaptor, please turn off the power switch, and extract an AC/DC adaptor from the electric socket. If the above should happen, this may cause a malfunction or start a fire.
- Please handle the power cable without bending forcibly or letting it support heavy items. A cut or