Labnics


# MICROBIAL AIR SAMPLER

## NMAS-201

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## 1. Safety Measures

- Clean the "porous sampling head" with alcohol after each use.
- Store the sampling head in a suitcase placed inside a plastic bag.
- During sampling, refrain from covering the sampling head with flat plates or soft objects.
- When installing, ensure a secure fit between the petri dish and its seat.

## 2. Introduction

**Microbial Air Sampler NMAS-201** is designed by unibody shell, solid and durable sampler device with a high sampling speed and accuracy. The sampler has many tiny holes through which the air is aspirated and also that reduces the puffball superposition and error of animalcule count. Programmable, sampling quantity can be set from 0.1 to 2.0 steres that in turn saves sampling time and other parameters. The sampling mouth is 397 meshes, the diameter is 0.7mm micropore resulting in the reduced bacterial overlap and microbial count error.

## 3. Features

- Flow control precision is high
- Porous sampling head for samples for testing
- 361 stainless steel sampling head
- PC operating software, easy to use
- Convenient sampling record automatic storage, query, and support the USB data export
- Built-in high capacity lithium battery, continuous sampling up to 4 hours
- Simple to exchange substrate utensil, just only take down sampling hole to exchange
- Dust bacteria collide evenly in petri dishes
- Particular sculpting, convenient to use
- Colour and LCD touch screen sampling time and other parameters
- Power socket and Power switch interface

## 4. Specifications

| Model | NMAS-201 |
|---|---|
| **Sampling quantity** | 3.53 FM / min |
| **Speed of sampling hole** | <0.4m>/s, basically the same as that of clean room (isokinetic sampling) |
| **Speed crash** | 16 m/s |
| **Collection efficiency** | 0.95 |
| **Sampling range** | 10 to 6000 L |
| **Volume** | Ø 120 × 300 mm |
| **Power Supply** | AC & DC, chargeable buttery: DC 7.4 V, continuous work for 4h after charged |
| **Weight** | 2.5 kg |
| **Configuration** | AC adapter, 2 Substrate utensil, Instruction Manual, Inspection report, Warranty Card |

## 5. Applications

Microbial Air Sampler is used in Biology Laboratory, Sterile Pharmaceutical factory, Hospitals, Food Processing Workshop, optical lenses and Electronic industries.

## 6. Installation

- During installation, make sure the ABS plastic sampler is correctly positioned, ensuring its surface is polished and free of dust.
- The upper section of the sampler features a porous sampling head made from stainless steel 316L.
- This sampling head is equipped with 397 micro-holes, each measuring 0.7mm in diameter.
- The micro-holes are perpendicular to the surface and have smooth interiors with high roundness, ensuring precise and effective sampling.

## 7. Operations

### 7.1 Boot Interface

- This device utilizes a 4.3-inch color touchscreen.
- On entering this interface, you can select the English system for the upcoming device operations.

Warning:

- Please do not use sharp or hard objects for screen operation.
- When the screen is operated, touch it lightly; don't press hard.

### 7.2 Main Interface

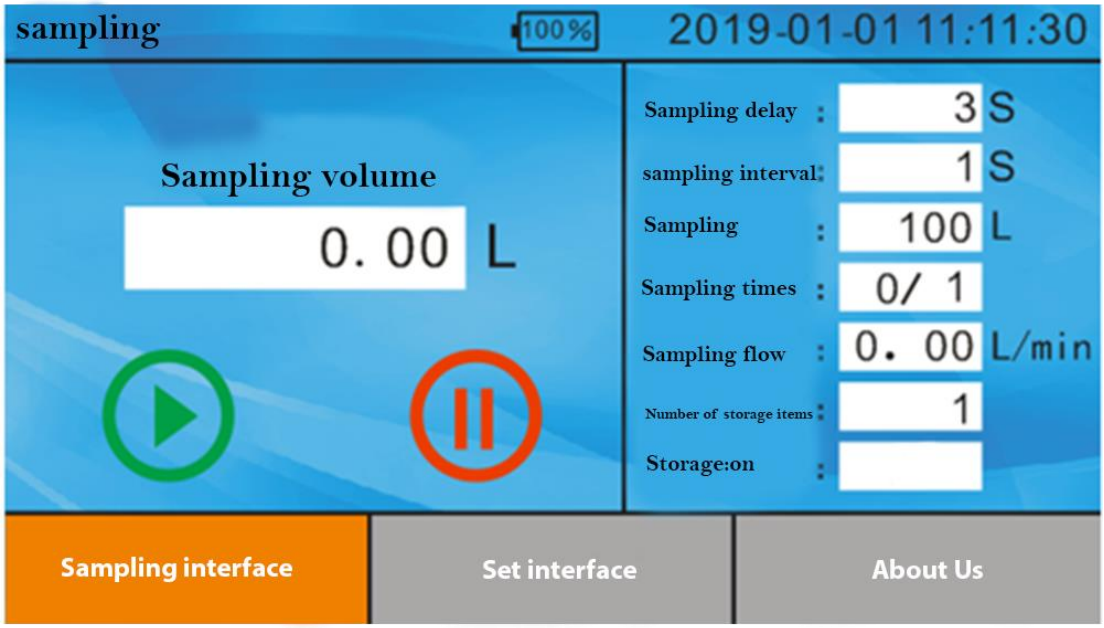


Figure-1

The contents displayed on this interface are:

1. **Clock:** The format is 2010-01-01 11-11-30 (year-month-day hour-minute-second)
2. **Power:** It is displayed as a percentage of total power, when it falls below 20%, sampling is prohibited to maintain accurate air volume measurement. Let it recharge promptly in such instances.
3. **Sampling volume:** It indicates the cumulative value of real-time sampling volume when it starts to run.
4. **Flow L/MIN**: The default setting is 100L/MIN.
5. **Times**: It is arranged by the format A/B, where A indicates the current running count and B indicates the set count. When A equals B; the operation is complete, and the machine stops.
6. **Storage:** This indicates the number of data items stored in the machine, which can store about 5000 items. When it is stored to 5,000 items but not cleared in

time, the later measured data will replace the original oldest data, make sure to export the data in time and clear the memory.

7. **Start button:**  to start the sampling pump, touch the Start button.

8. **Stop button:**  to stop the sampling pump, touch the Stop button or press this key.
9. **Setting interface:** Touch this key to jump to the setting interface; as shown in the figure below

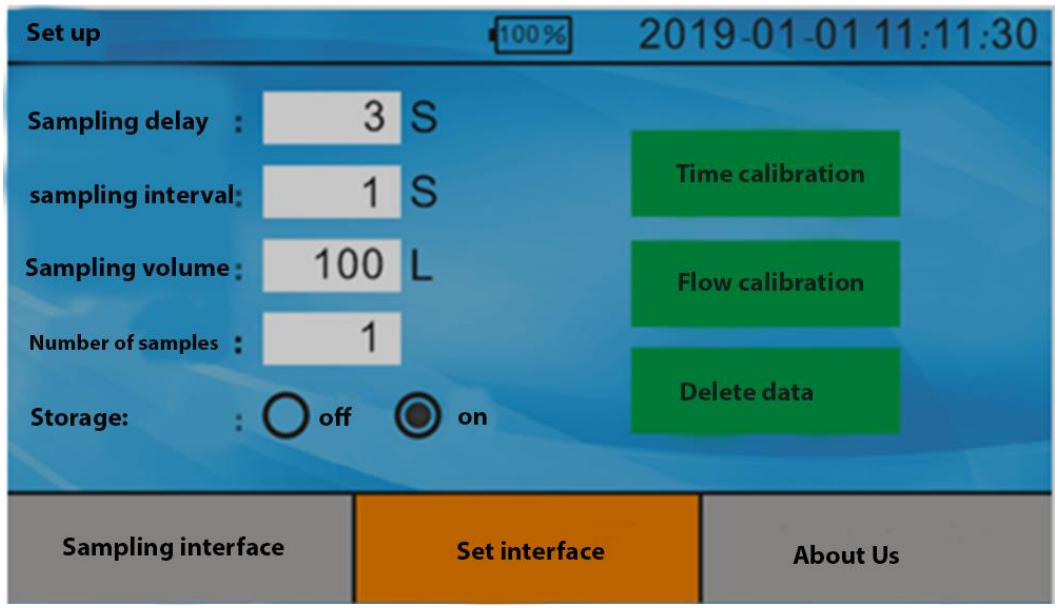


Figure-2

10. **Sampling Delay:** The range from 0 to 255S indicates the time it takes to begin calculating the sampling amount after the sampling process has started.
11. **Sampling interval:** The range of 0 to 9999 seconds represents the interval time between successive samplings when sampling multiple times.
12. **Sampling volume:** The range from 0 to 9999 liters indicates the sampling volume for a single sampling event.
13. **Sampling times**: The range is from 0 to 99. Setting it to 0 initiates continuous sampling, causing the sampling pump to run continuously.
14. **Flow calibration**: This function calibrates the flow rate at 100 liters per minute (L/Min). Adjust the percentage value to correct deviations in flow rate. Increase the percentage value if the flow is low; decrease it if the flow is high.
15. **Time calibration**: Use this function to calibrate the system clock. Set the date and time format strictly as **** (year) ** (month) ** (day) ** (hour) ** (minute) ** (second), for example, 20190101 11:11:20.
16. **Delete data**: Press the delete button to erase all stored data in the machine.
17. **Statement**: Flow calibration is intended for system debugging and calibration purposes only. Adjustments should not be made without permission.

18. **About us:** Press this button to navigate to the manufacturer information interface, where details about the manufacturer can be accessed.

### 7.3 Software Operation – PC

a. Software Installation

- Open the U disk, which contains two files, "software driver" and "air planktonic bacteria collection system"
- Install the software driver, double-click the software driver compression package or decompress the file, double-click the "SETUP.EXE" file in the subdirectory, and click Install. After the installation is complete, a dialog box will pop up to prompt that the installation is complete.
- The air planktonic bacteria collection system is free of installation software, just double-click the software, the interface is as follows:

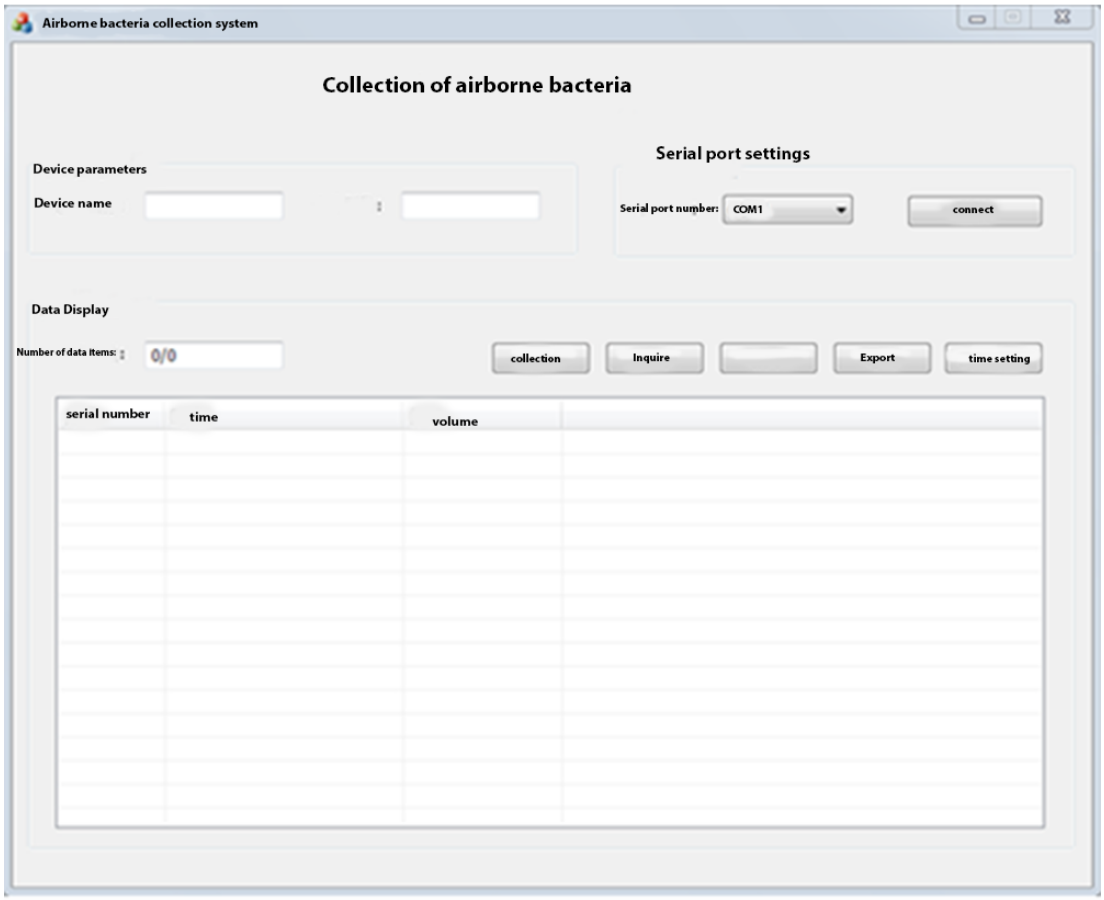


Figure-3

b. Device Connections

- connect one end of the accessory USB cable to the device, and the other end to the computer.

- **Preliminary preparation**: The connection of this device requires the customer to select the serial number corresponding to the USB port of the device to connect successfully.

- There are two methods:
  i. **First Method:** Before the device is connected, click Connect to check how many serial port numbers are available, such as COM1, COM2, etc. The customer can record it. After connecting the device to the computer, click the connection again, and there will be one more serial port number than the original one. Select this serial port number to connect successfully.
  ii. **Second Method:** Connect the device and the computer, try a different serial port number, click Connect and click Collect, the connection is successful when the data is displayed.

c. Software operation

- When the device is successfully connected, the system will automatically read the device name, device model, and data number.
- Click "Acquisition" to display the internal data of the machine, arranged according to time.
- Click "Query" and the following dialog box will pop up:

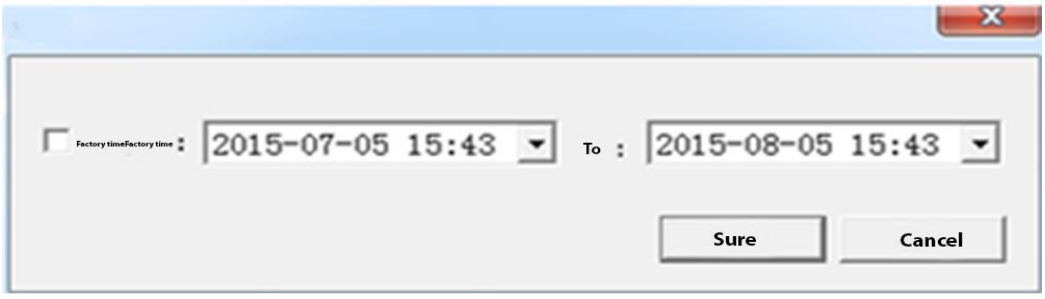


Figure-4

- At this time, you need to tick √ in the small box before the time, and then select the time (the year, month, and day can be selected through the drop-down menu, and the hour and minute need to be manually changed), and click OK to query the collected data in the time.
- **Note:** Because the query function and the collection function overlap in the time selection when using the collection function, you need to cancel the time query selection. If you do not remove the √ sign before the time, click on the collection to read the samples of the time data.
- Click "Delete" to delete all data

- Click "Export" to export the data, the save format is EXCEL format, and the default name is "Air Planktonic Bacteria Sampling Data + Year, Month, and Day". The content is as shown in the figure below:

| | A | B | C |
|---|---|---|---|
| 1 | Particle Count Sampling Data | | |
| 2 | serial number | time | volume |
| 3 | 1 | 2015-08-04 10:18:39 | 100.00L |
| 4 | 2 | 2015-08-04 10:19:51 | 100.00L |
| 5 | 3 | 2015-08-04 10:21:04 | 100.00L |
| 6 | 4 | 2015-08-04 10:57:08 | 100.00L |
| 7 | 5 | 2015-08-04 10:59:12 | 100.00L |
| 8 | 6 | 2015-08-04 11:00:25 | 100.00L |
| 9 | 7 | 2015-08-04 11:01:37 | 100.00L |

Figure-5

- Click "Time Setting" to make the device clock consistent with the computer clock.

## 8. Troubleshooting

| Common Troubleshooting | Reason | Solution |
|---|---|---|
| • Press the switch power button<br>• The display does not show a button | • No battery<br>• Switching power button failure | • Connect to external power |
| • The sampling pump does not work | • The battery voltage is too low<br>• Touch screen failure<br>• The sampling pump is damaged | • Connect to external power |

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