

# MIC Meter Industrial Company

## Smart soil meter user manual

Soil temp./moisture/pH/Conductivity/Nitrogen/Phosphorus/Potassium



**Note:**

The main probe is calibrated before leaving the factory. If you replace it with a spare probe, please follow the steps below to enter the correct calibration value.

**Additional Information:**

If your soil type is not potting soil, and the measured values show significant deviation after entering the following calibration values, please reset the calibration value to 0.

| Parameter                                         | pH   | EC   | Nitrogen (N) | Phosphorus (P) | Potassium (K) |
|---------------------------------------------------|------|------|--------------|----------------|---------------|
| Main Probe Calibration Value (pre-set at factory) | 1.08 | 0.20 | 0.60         | 0.17           | 0.14          |
| Spare Probe (set manually if replaced)            | 1.09 | 0.51 | 0.95         | 0.27           | 0.23          |



Please enter the correct calibration values before replacing the soil probe.



With the device off, hold Set (Left) + Adjust (-) and briefly press Power to enter pH fine-adjust mode.



Switch Adjustment Mode:  
Briefly press the Set (Left) button to cycle through Cond, N/P/K fine-adjust mode, and temp. & humidity compensation mode.



Adjust Values:  
Briefly press Lock (+) to increase and Adjust (-) to decrease the value.



Save Settings:  
Hold the Mode and Unit buttons to save.  
"SA" on the screen indicates successful saving.



Exit Operation:  
Press and hold the Power button to exit.

**Item: 987S8D\_B Nine-in one handheld/on-line soil meter (measuring pH, EC, N, P, K, soil temperature and moisture).**

Measuring 9 parameters at the same time: pH, EC, soil temperature (shallow), soil moisture (shallow), nutrient indicators: nitrogen, phosphorus and potassium.

**Specification**

| Model                                                          |                       | 987S8D_B |                             |                         |                            |                                                    |
|----------------------------------------------------------------|-----------------------|----------|-----------------------------|-------------------------|----------------------------|----------------------------------------------------|
| Parameters (sensor)                                            |                       | pH       | EC                          | T( C )                  | MC (%)                     | NPK                                                |
|                                                                |                       | Soil pH  | Soil conductivity           | Shallow/Deep soil temp. | Shallow/Deep soil moisture | Soil nutrients_ Nitrogen, phosphorus and potassium |
| All needle be buried or inserted in the measured medium (soil) | Measure ment range    | 3~9pH    | 0~10mS/cm                   | -40°C~80°C              | 0%~100%                    | 0~1999ppm                                          |
|                                                                | Sensing needle length | 10 cm    | 10 cm                       | 10 cm                   | 10 cm                      | 10 cm                                              |
|                                                                | Resolution            | 0.01pH   | 0.01mS/cm                   | 0.1°C                   | 0.1%                       | 1ppm                                               |
|                                                                | Accuracy              | ± 0.5pH  | ±2%FS (0.2mS/cm) (200uS/cm) | ±1.0°C                  | ±5%(10~55%) ±7%(Others)    | ±10% of rdg (e.g.1000ppm= 100ppm) (500ppm=50ppm)   |
| Bluetooth                                                      |                       | Yes      |                             |                         |                            |                                                    |
| SD card memory                                                 |                       | 16GB     |                             |                         |                            |                                                    |

**\*\*When measuring frozen ice soil layers, the moisture content will be low and inaccurate, requiring user to make compensation.**

**\*\*Factory defaults; for measuring ordinary yellow soil, black soil and red soil. It is not suitable for measuring absolute moisture of saline-alkali land, sandy land, or other powdery objects with large salt content.**

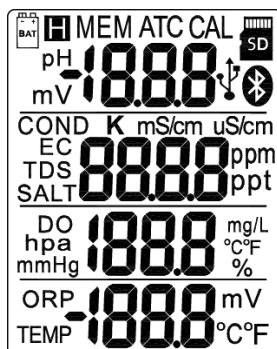
**FEATURES:**

- ✓ The meter is protected by rubber case, which is water repellent, the sensing needle features waterproof level.
- ✓ Built-in Bluetooth, user can upload measuring value to cloud via Bluetooth APP, and the area or plant name can be edited, the QR code can be scanned (or selected from the photo album on the smart phone). The device is very suitable for greenhouse agriculture.
- ✓ All measured value can be displayed on the screen, and after connecting with Bluetooth, the instant value will be displayed on smart phone. Manual recording function or automatically recording function can store the data on the SD card and save as excel format.
- ✓ Three measurement mode: (1) Manual recording (Save data by SD card) (2) Automatic recording function (Save data by SD card) (3) Turn on Bluetooth mode, and upload data to the Cloud via Bluetooth. The data can be shared to other applications (such as Line, WeChat, Watsapp, etc.)
- ✓ TV display or A3 LED display is selectable: The value can update instantly on the display signboard.

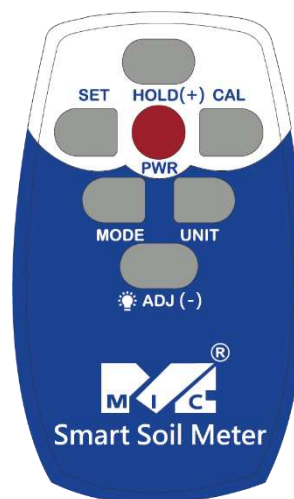
**SUPPLIED**

- 1) Meter (Warranty: 2 years) Dimension :170\*65\*23mm.
- 2) Protective case (The warranty does not apply to consumable parts) .
- 3) Shallow soil temp., moisture, pH, EC, PNK sensing needle (5PIN) x2 pcs (12 months warranty) .
- 4) 32G SD Card (The warranty does not apply to consumable parts) .
- 5) 9V Alkaline (The warranty does not apply to consumable parts) .
- 6) 9V EU adaptor (The warranty does not apply to consumable parts).
- 7) User manual.
- 8) Brush.

## FULL DISPLAY



## OPERATION PANEL



## POWER

- 1) 9V Alkaline battery. (Customer can purchase rechargeable battery by themselves)
- 2) 9V 0.5A adaptor.

**NOTE:** For long-term usage, please use adaptor to power the meter.

**For each operation, make sure you are using fresh batteries, same brand, same power of batteries is required, and otherwise meter shows erratic readings or leakage. Warranty is void if not follow the notices. (Note : remove batteries when not use ! )**

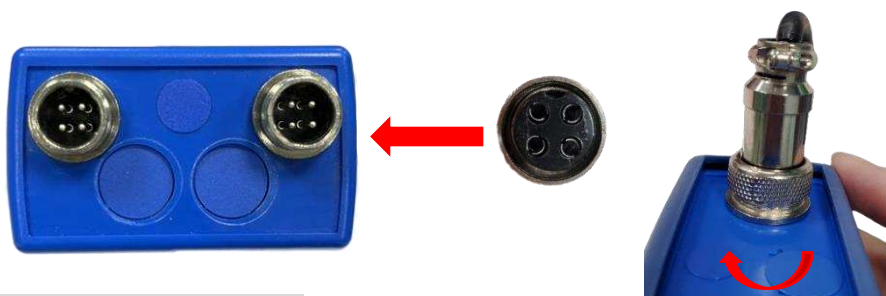
## INSTALLATION

**NOTE: Aligning the position of PIN and then inserted, if excessive force causes the pin to become distorted, it will not be covered by the warranty!**

After inserting the PIN, tighten the screw clockwise.



Insert soil sensing probe into the Mini Din on the right side of top cover, and then tighten the nut clockwise.



## Measurement method

### ● Soil surface measurement

Select a suitable measurement location, avoid rocks, make sure the needle does not hit hard objects. Dig the topsoil to the required measured depth, and then insert soil sensor vertically.

It is recommended to perform multiple measurements within a small range of a measuring point.



**\*\*For very loose soils such as peat soil, collect a soil sample and place it into a bottle or container, then compress it firmly before testing. In this case, the temperature and moisture readings are for reference only.**

### ● Subsoil measurement

Dig a pit vertically, which diameter is > 20cm. Insert the sensor needle horizontally into the pit all and fill the pit tightly, after stabilizing for a period of time, it can record the data for many days, the data can be stored by SD card.



### **\*\*NOTE\*\***

1. Insert the sensor vertically: Insert the sensor parallel into the soil to be measured. Do not shake the sensor when inserting, otherwise the sensor may bend and damage the steel needle.
2. The needle sensor must be in full contact with the soil and compacted to make sure measuring data is accurate.
3. If there are hard lumps or foreign objects in the tested soil, please reselect the location of measured soil.
4. Avoid direct sunlight on the sensor, which may cause temperature rise while measurement. When using in the field, pay attention to preventing lightning strikes.
5. When measuring pH, conductivity, nitrogen, phosphorus and potassium, the soil needs to be kept wet (more than 20%).
6. When storing the soil sensor, wipe the probe with a paper towel and store the sensor in a dry environment at 0~60°C.
7. When meter powers on, do not leave the sensor in the air for a long time due to there is RF electromagnetic radiation exists in the air.

### **OPERATION**

**AUTO POWER OFF** : Meter will turn off automatically in 15 minutes when no use, to disable auto power off function by pressing **HOLD** and **PWR** button, “n” momentarily shows on screen, now meter is at non-sleep mode, then turns to normal measurement, Meter default auto power off. (V03 indicates program’s version).

**POWER**: short press **PWR** button, then enter AUTO/USER selection mode.

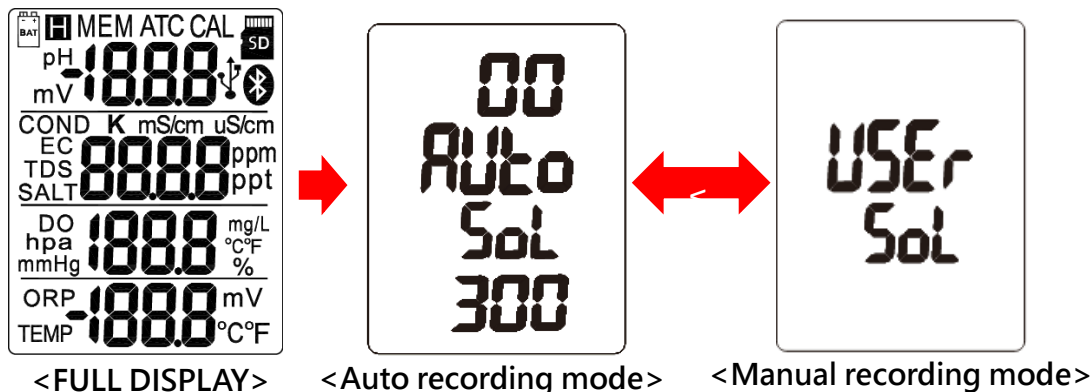
**MODE selection**: short press **SET** button to switch AUTO mode (automatic recording mode) or USER

mode (manual recording mode).

SoL indicates Soil

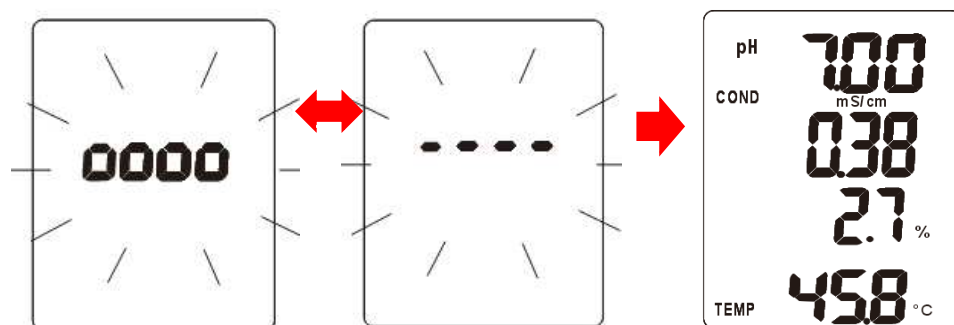
300 indicates sample rate of recording (other sampling time can be selected).

Short press **CAL** button to turn on/off voltage detection, battery icon  appears on the screen indicates voltage detection function is turned on. When the voltage is lower than 6.4V, a reminder page will continue to appear on the screen.



### AUTO RECORDING MODE

After selecting automatic recording mode, briefly press **PWR** button, it will show 0000 and ---- alternately to indicate that automatic detection is in progress. The detection time is about 10 seconds, and the measured value will be displayed. Long press **PWR** button to turn off the meter,



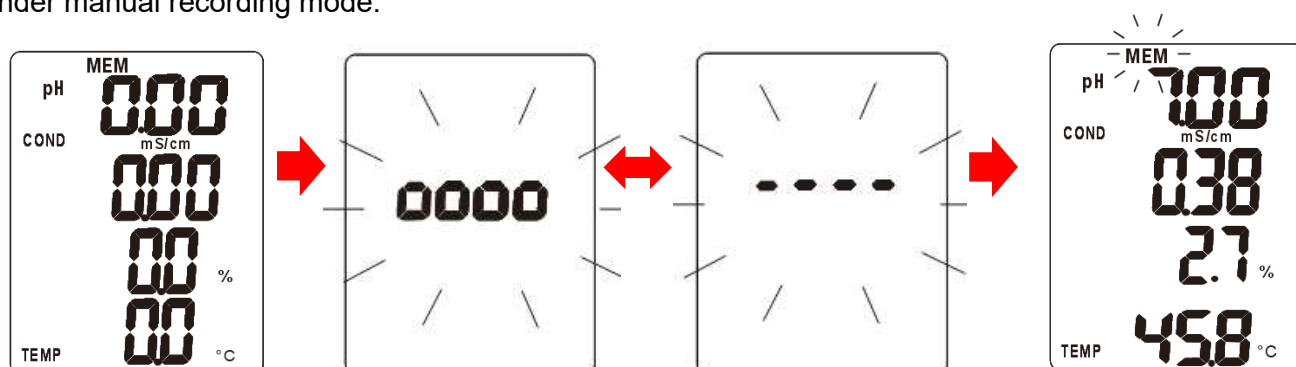
**FREEZE READINGS** : Freeze the current readings by pressing **HOLD** button, then icon  will appear on the top left of screen. At the time, user can still press **SET** button to toggle to nitrogen, phosphorus, potassium, soil moisture and humidity readings.

**\*\*NOTE: if the readings are not changed during measurement, please check the HOLD button has been pressed accidentally or not.**

**BACKLIGHT(for measuring at night)** : long press **ADJ** button to turn on/off the light.

### MANUAL RECORDING MODE

After selecting USER mode, briefly press **PWR** button, the readings show 0, short press **PWR** button to start detection, it takes about 10 seconds to measure the value. "MEM" icon indicates the measurement is under manual recording mode.



Short press **PWR** button again to detect new readings. To save the value, short press **MODE** button can save one point, the data will be saved to SD card. When SD card connect to the PC, there is a manually recorded folder file name MANUAL.CSV. When making a new record, you can change the file name first to avoid the data be recovered.

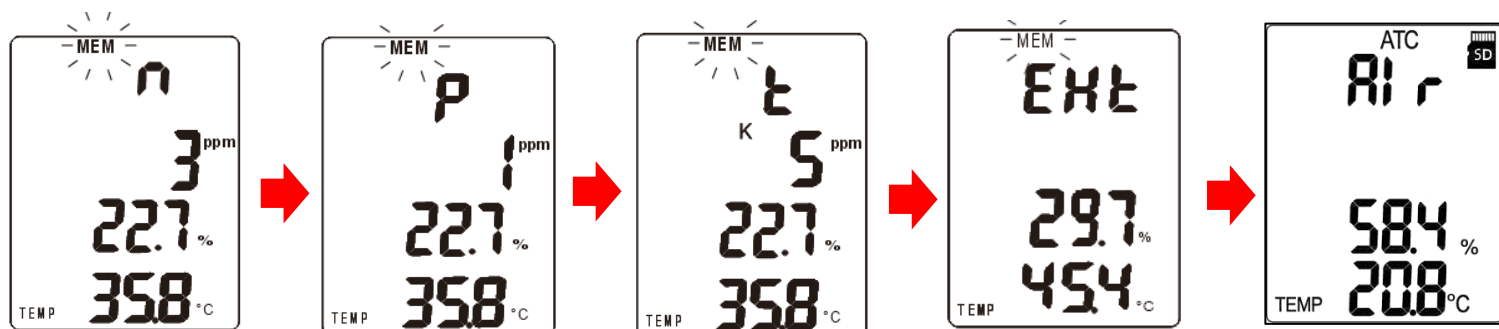


| #M#021#2 FileName: MANUAL.CSV |           |          |       |      |      |      |       |       |       |         |       |         |  |
|-------------------------------|-----------|----------|-------|------|------|------|-------|-------|-------|---------|-------|---------|--|
| 21                            |           |          |       |      |      |      |       |       |       |         |       |         |  |
| .No: 987S9_04_00              |           |          |       |      |      |      |       |       |       |         |       |         |  |
| Point(s): 3                   |           |          |       |      |      |      |       |       |       |         |       |         |  |
| #Point(s)                     | DATE      | TIME     | Temp  | RH   | PH   | EC   | N     | P     | K     | EX_Temp | EX_RH | BATTERY |  |
| Point(s)                      | (Y/M/D)   | (H:M:S)  | (C/F) | (%)  | ()   | (ms) | (ppm) | (ppm) | (ppm) | (C/F)   | (%)   | (V)     |  |
| 11                            | 2024/6/11 | 13:16:49 | 26.9  | 16.7 | 5.94 | 0.18 | 13    | 18    | 36    | 26.4    | 16.2  | 9.03    |  |
| 20                            | 2024/6/11 | 13:36:24 | 26.5  | 16.8 | 5.85 | 0.15 | 11    | 15    | 31    | 25.9    | 15.8  | 9.04    |  |
| 21                            | 2024/6/11 | 13:36:43 | 26.5  | 16.6 | 6.03 | 0.18 | 13    | 18    | 37    | 25.9    | 16    | 9.04    |  |

### DELETE HISTORY RECORDS :

Delete the manual file on the SD card.

Under general measurement mode, short press **SET** button to toggle to nitrogen, soil moisture and temperature → phosphorus, soil moisture and temperature → potassium, soil moisture and temperature → EXT (Deep soil moisture and temperature). → Ambient Temperature and Humidity

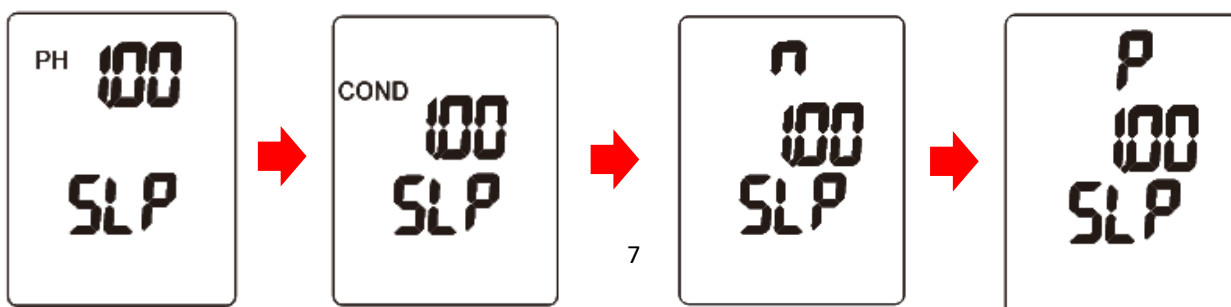


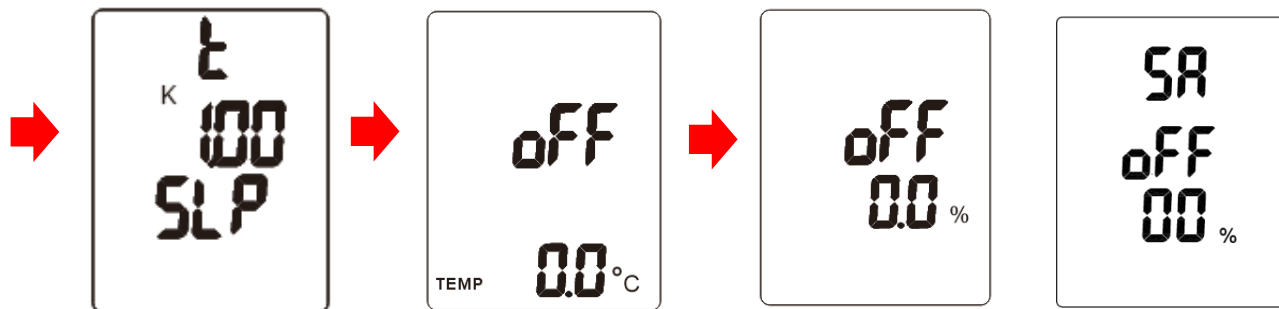
### CALIBRATION :

If the reading is different from certified reference material, factors can be adjusted to compensate the readings.

With meter off, press and hold **SET + ADJ** buttons by left finger, and then short press **PWR** button to enter pH coefficient adjustment mode.

Short press **SET** button to toggle to Cond., nitrogen, phosphorus, potassium, soil humidity and temperature compensation mode. Short press **HOLD** button to increase the value, short press **ADJ** button to decrease the value, after setting, press and hold **MODE+UNIT** buttons to save the value. When the setting is finished, display will show "SA".





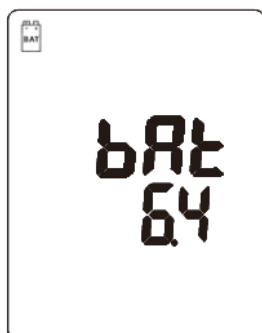
The SA position varies depending on the displayed parameter.

**SD CARD DATALOGGING**(plug in the SD card and start recording) :

**NOTE:** The SD card symbol  flashes once indicates the data recorded successfully, if the symbol flashes for several time indicates the data recorded failure. Check if the battery is weak or the SD card is damaged.

※ It is recommended to use adaptor to power the meter while using SD card recording function. After inserting SD card, “SD” icon will appear on the upper right side.

※ When the voltage is lower than 6.4, battery icon  will show on the screen, it indicates power is not enough to activate SD function but other functions are still work. Replace new batteries or plug with adaptor, the battery icon will disappear and can start recording again.



#### ● SD Card Information

- Power the meter with 9V battery or 9V AC/DC adaptor.
- Insert an SD card (16G supplied) into the SD card slot at the left side of the meter. The card must be inserted with the front of the card (label side) facing toward front of the meter.  
After inserting the SD card, icon “SD” will appear on the upper right side of screen.
- If the SD card is being used for the first time it is recommended that the card be formatted.

#### ● SD Card Formatting

**NOTE:** Always confirm that the device is compatible with the SD, SDHC or SDXC memory card before formatting.

**WARNING:** Backup all your data before formatting. Formatting will erase all data on the memory device.

##### a) Open the Computer window.

Click the Start or Windows menu and select Computer (Windows Vista/7) or My Computer (Windows XP). For Windows 8 users, type “computer” and click the Computer icon in the Apps search results. For Windows 10, open the File Explorer. Then find “This PC”.

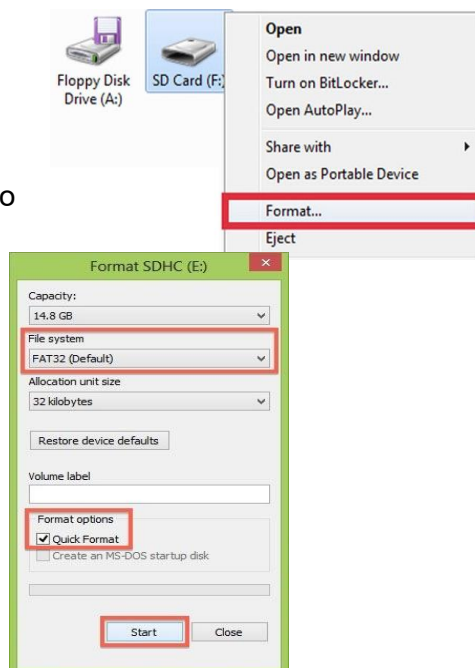
## b) Find your SD card.

The removable drive that appears last in the "**Devices with Removable Storage**" list should be the SD card that you just connected to your computer. Right-click on your SD card to bring up the right-click menu options. Select **Format**. This will take you to the Format window. Keep "Capacity" and "Allocation unit size" set to default.

## c) Select the file system.

This is the way files are stored on the card. Different systems use different file structures. In order for the SD card to be read by any device, select **FAT32** as the file system. This will enable it to be read by cameras, phones, printers, Windows, Mac, and Linux computers, and more.

1. Select Quick Format.
2. Click "Start".
3. Once the formatting is complete, you can close the window.



## ● Automatic Datalogging

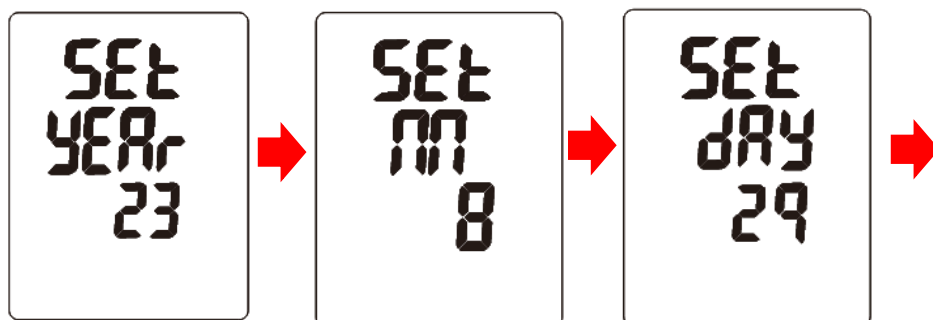
- The meter stores a reading at a user-selected sampling rate onto an SD memory card. The meter defaults to a sampling rate of 300 seconds.
- **NOTE:** For long time recording, plug in the adaptor for SD data logging.

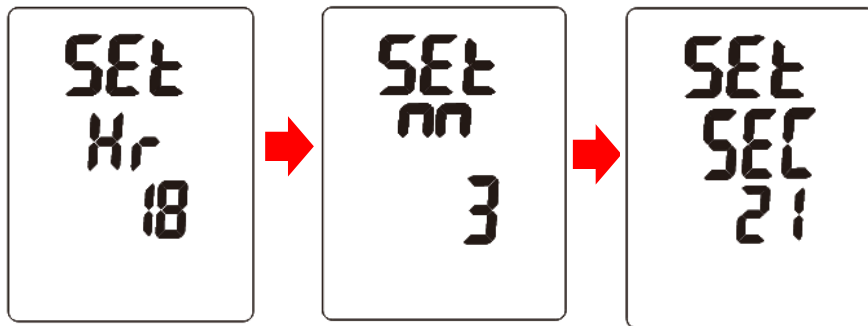
## a) Setting the datalogger clock time

**NOTE:** Make sure the clock of the meter is set up correctly in order to get accurate date/time during datalogging sessions.

1. With meter on and select AUTO mode, under automatic recording mode, long press **SET** button to enter sample rate setting. And long press **SET** button again to enter YEAR setting.
  2. Short press **UNIT** button to toggle to month, date, hours, minutes, and seconds setting.
- HOLD** : ↑ increase value **ADJ** : ↓ decrease value **SET** : ← go forward 校正(右):→ go backward
3. Hold and press **MODE+UNIT** buttons to save the value, screen will show "SA" indicates the setting has been saved. Long press **SET** button again to back to normal measurement mode.

**NOTE:** To escape setting page without any setting, power off the meter directly.





#### b) Setting the datalogger sampling rate (Default is 300 seconds)

1. While meter is power on, long press **SET** button to enter sampling setting.
2. Available settings are: 15 seconds, 30 seconds, 60 seconds, 120 seconds, 300 seconds, 600 seconds, 900 seconds and 1800 seconds.
3. Short press **HOLD** button to increase the digit, short press **ADJ** button to decrease the digit.
4. Hold and press **MODE+UNIT** buttons to save the value, the screen will show "SA " indicates the setting is finished. Long press **SET** button twice to back to normal measurement mode.

#### c) Start datalogging

After inserting the SD card, display will show icon  on the upper right of the screen.

1. With SD card inserted, the recording will start automatically, now the SD icon  will flash on the upper right side of the screen. E.g.: if sample rate is 15 seconds, the icon will flash once every 15 seconds .
2. When  disappears, SD stop to record data or SD card is not being inserted.
3. When an SD card is used for the first time a folder is created on the card and named **the model number**. Under the MODEL number folder, the MODEL number and **AUTO+YEAR** folder will be automatically created. e.g.: /987S9/AUTO2023/.....
4. When datalogging begins, a new folder named **M(month)/D(date)/H(hour)/M(minute)** is created on the SD card in the **AUTO+YEAR** folder. At the same time, a new spreadsheet document (CSV.) named M/D/H/M is also created under its folder.  
e.g.: /987S9/AUTO2023/04051858/04051858.csv
5. Each CSV. file can be stored up to 30,000 points.  
After reaching 30,000 points, a new file name will be auto created as **M/D/H/M** right after the last recording time. Unless you interrupt the recording, this process continues in the initial created M/D/H/M folder.  
e.g.: /987S9/AUTO2023/12261858/12262005.csv

**NOTE1:** Datalogging stopped when replacing the probe, removing the SD card, removing batteries, adaptor or resetting the sampling rate.

**NOTE2:** When the recording is been stopped, a new folder will be created as M/D/H/M from the next datalogging.

**NOTE3:** When the recording year and model number is changed, the new folder will be also created accordingly.

**NOTE4:** When SD card records 1 points, "SD" icon will flash one time, once the "SD" icon flashes three times, it means the meter is under low battery, the recording will be failed if the battery is low.

● **SD Data Transfer to PC**

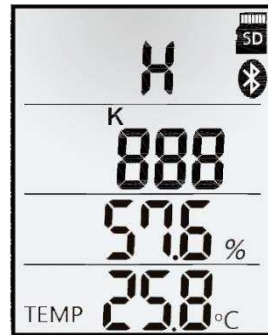
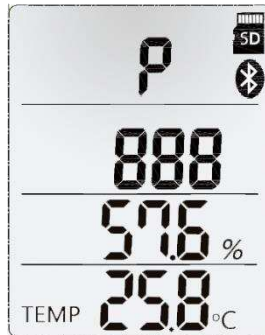
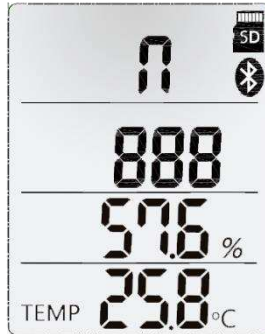
- Remove the SD card from the meter.
- Insert SD card directly into a PC SD card slot or use a SD card reader.
- Open the saved documents (CSV.) in the folder from the PC to get the data.
- File name /Product number/ Sample rate/ Recording point/ Start recording time/ End recording time/ Recording date/time /Recording parameters will be shown in the CSV. file.
- Data show "0" stands for no measured value during recording period.

|            |                 |              |       |      |      |      |       |       |       |         |       |         |  |
|------------|-----------------|--------------|-------|------|------|------|-------|-------|-------|---------|-------|---------|--|
| #A         | FileName:       | 08220903.CSV |       |      |      |      |       |       |       |         |       |         |  |
| Prod.No:   | 987S9_03_00     |              |       |      |      |      |       |       |       |         |       |         |  |
| Sample Rat | 300             |              |       |      |      |      |       |       |       |         |       |         |  |
| Point(s):  | 55              |              |       |      |      |      |       |       |       |         |       |         |  |
| Start:     | 2023/8/22 09:03 |              |       |      |      |      |       |       |       |         |       |         |  |
| End:       | 2023/8/22 13:33 |              |       |      |      |      |       |       |       |         |       |         |  |
| #Point(s)  | DATE            | TIME         | Temp  | RH   | PH   | EC   | N     | P     | K     | EX_Temp | EX_RH | BATTERY |  |
| Point(s)   | (Y/M/D)         | (H:M:S)      | (C/F) | (%)  | ()   | (ms) | (ppm) | (ppm) | (ppm) | (C/F)   | (%)   | (V)     |  |
| 1          | 2023/8/22       | 09:03:24     | 43.6  | 4.4  | 7    | 0    | 0     | 0     | 0     | 28.5    | 5.1   | 4.82    |  |
| 2          | 2023/8/22       | 09:08:24     | 45.9  | 29.1 | 6.6  | 0.02 | 1     | 2     | 5     | 30.9    | 25.1  | 4.8     |  |
| 3          | 2023/8/22       | 09:13:24     | 46.5  | 29.2 | 6.44 | 0.02 | 1     | 2     | 5     | 32.1    | 25.1  | 4.8     |  |
| 4          | 2023/8/22       | 09:18:24     | 46.8  | 29.2 | 6.4  | 0.02 | 1     | 2     | 5     | 33.1    | 25.1  | 4.83    |  |
| 5          | 2023/8/22       | 09:23:24     | 47.4  | 29.6 | 6.41 | 0.02 | 1     | 2     | 5     | 34.2    | 24.7  | 4.82    |  |
| 6          | 2023/8/22       | 09:28:24     | 48.1  | 29.6 | 6.43 | 0.02 | 1     | 2     | 5     | 35      | 24.4  | 4.82    |  |
| 7          | 2023/8/22       | 09:33:24     | 48.3  | 29.6 | 6.44 | 0.02 | 1     | 2     | 5     | 35.7    | 24.2  | 4.82    |  |
| 8          | 2023/8/22       | 09:38:24     | 48.5  | 29.6 | 6.44 | 0.02 | 1     | 2     | 5     | 36.2    | 24    | 4.82    |  |
| 9          | 2023/8/22       | 09:43:24     | 48.7  | 29.6 | 6.45 | 0.02 | 1     | 2     | 5     | 36.7    | 23.9  | 4.82    |  |
| 10         | 2023/8/22       | 09:48:24     | 48.9  | 29.5 | 6.45 | 0.02 | 1     | 2     | 5     | 37      | 23.9  | 4.82    |  |
| 11         | 2023/8/22       | 09:53:24     | 49.1  | 29.5 | 6.44 | 0.02 | 1     | 2     | 5     | 37.3    | 23.8  | 4.8     |  |
| 12         | 2023/8/22       | 09:58:24     | 49.2  | 29.6 | 6.46 | 0.02 | 1     | 2     | 5     | 37.4    | 23.5  | 4.82    |  |
| 13         | 2023/8/22       | 10:03:24     | 49.1  | 29.4 | 6.46 | 0.02 | 1     | 2     | 5     | 37.4    | 23.4  | 4.82    |  |
| 14         | 2023/8/22       | 10:08:24     | 49.2  | 29.4 | 6.46 | 0.02 | 1     | 2     | 5     | 37.6    | 23.2  | 4.82    |  |
| 15         | 2023/8/22       | 10:13:24     | 49.2  | 29.3 | 6.47 | 0.02 | 1     | 2     | 5     | 37.7    | 23.1  | 4.82    |  |

▲ Automatic Datalogging ▲



# Bluetooth APP



## OPERATING INSTRUCTION:

Please go to below link to download APP or scan below QR Code

Android APP

<https://reurl.cc/W18IKy>

APPLE APP

<https://reurl.cc/O4Rq9y>



### Turn on the Bluetooth on smart phone.

1. With the meter power on, and open Bluetooth APP, it will detect nearby Bluetooth devices, follow below steps to start detection.

### Turn on the Bluetooth on smart phone

1. Turn on the Bluetooth function (Go to application to open the location and camera permissions first).
2. Turn on the GPS location function on the smart phone. 
3. Turn on the APP to connect Bluetooth device.
4. Click the icon to perform Bluetooth pairing. 
5. Connect Bluetooth device / name and MAC# · click  icon to enter measurement mode, display will show parameters after detection. Edit the remarks field "Measurement Area Name" (limited to 10 characters). Upload the value to cloud by pressing upload button, the screen will pop-up **record upload successfully**, you can also scan location QR code ( can be made by distributor). For next recording, short press upload button again.
6. **When using Apple iOS system, you need to enter MAC code (12 codes were written on the silver sticker at the side of the body)** (Android system omits this step).
7. After detection is finished, click data  資料 icon can share testing history to LINE for analysis or save as excel file.
8. For uploading data to cloud, short press upload button  上傳 every time.
9. To delete all data, short press Clear button  清除 .
10. Close APP by pressing  button.



**Step 1** Go to application first and turn on location and camera permissions



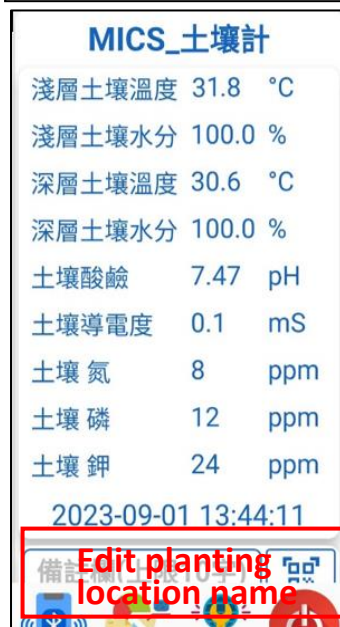
**Step 2** Turn on APP to connect Bluetooth device



**Step 3** Click soil meter Bluetooth device



**Step 4** After detecting the device, click tool icon to view measuring values



**Step 5** Enter "Planting location" and press upload button



**Step 6** Or upload planting location by scan QR Code



**Step 7** Upload planting photo



**Step 8** Apple iOS enter MAC number at first time



**Step 9** MAC Address Located on the device' s side silver label (12 digits): XXXXXXXXXXXX.



**Step 10** View historical data



**Step 11** Share the data and photos to LINE or What' s app



**Step 12** View the recorded curve on the APP

※Step 7- Hold smart phone horizontally to take the picture, so the direction of the uploaded picture will be correct.

※Step 11- The data shared is as below picture.

| 序 | 照片                                                                               | 地點    | 時間                  | 緯度        | 經度         | 淺層土壤溫度 | 淺層土壤水分 | 深層土壤溫度 | 深層土壤水分 | 土壤酸鹼 | 土壤電導率 | 土壤濕度 | 土壤鹽度 | 土壤pH | 土壤電阻 | 土壤電容 | 土壤電阻率 |
|---|----------------------------------------------------------------------------------|-------|---------------------|-----------|------------|--------|--------|--------|--------|------|-------|------|------|------|------|------|-------|
| 7 |  | 台中市豐盛 | 2023-09-01 14:41:50 | 24.120000 | 120.900000 | 28.7   | 24.4   | 28.8   | 24.9   | 6.20 | 0.70  | 54   | 70   | 100  | 20   | 80   | 10000 |
| 8 |  | 台中市豐盛 | 2023-09-01 14:41:57 | 24.120000 | 120.900000 | 28.7   | 24.4   | 28.8   | 24.9   | 6.20 | 0.70  | 54   | 70   | 100  | 20   | 80   | 10000 |



Step 13 soil temperature and moisture threshold value can be set



Step 14: Pause Button Stops data upload.



Step 15 Click delete button to clear historical values



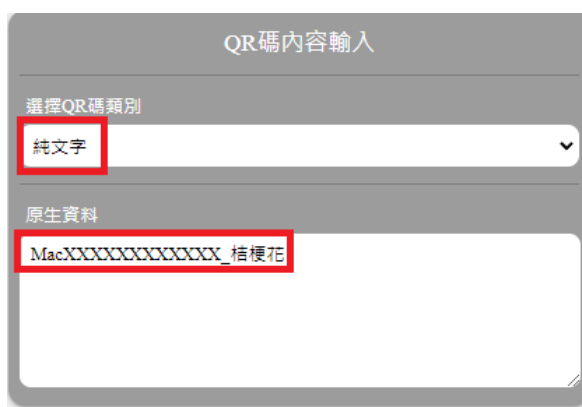
Step 16 Turn APP

## How to make QR code?

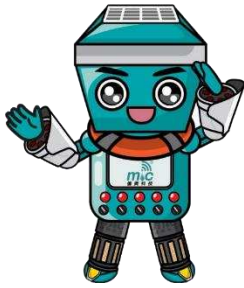
Step 6 Open the pre-made QR code in the album, when you go to fixed location for measurement, you can scan the QR code and measured location name will be entered.

Go to QR code generator website: <https://qr.ioi.tw/zh/>

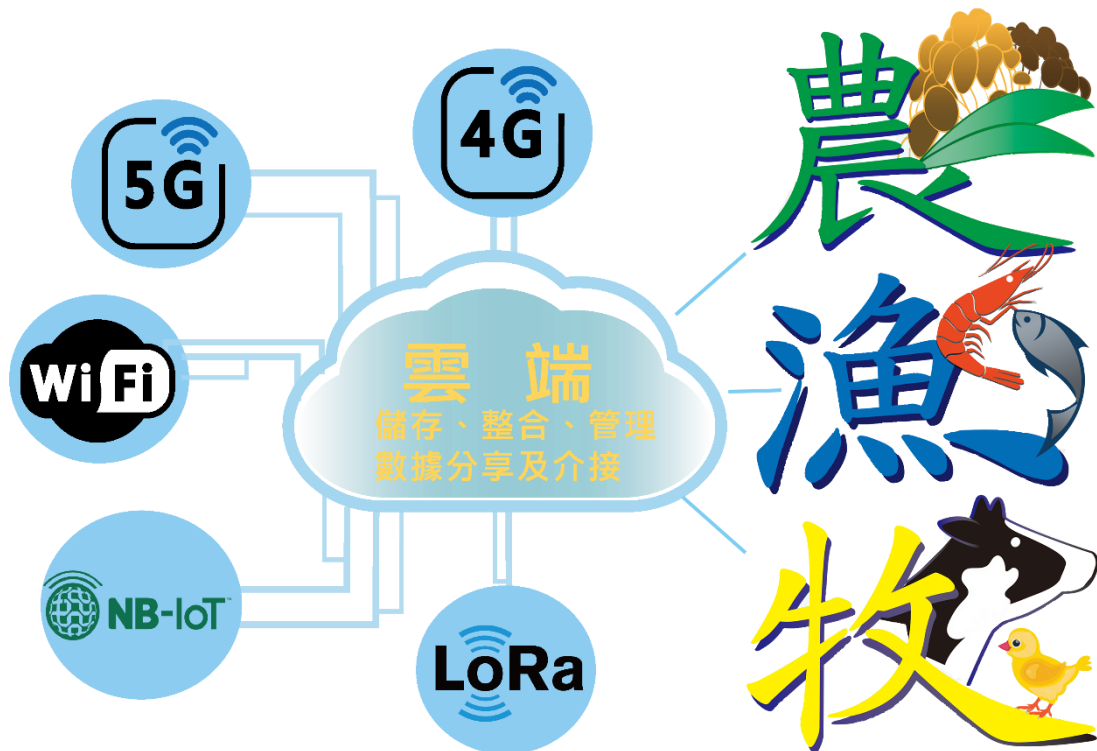
Select QR code category as : text only, enter Mac and 12 MAC\_Planting name or planting location.



※Or you can contact distributor to make QR code.



# MIC Cloud system



## WIFI CLOUD OPERATION

**USER ID AND PASSWORD : (ID and password has been set up at factory)**

The Cloud is support for any Windows system, user can view the data on the below website:

<http://www.mic-meter.com/mic/>, the data could be downloaded as csv. File.

### 1. Select language:

User can select language by pull-down menu.

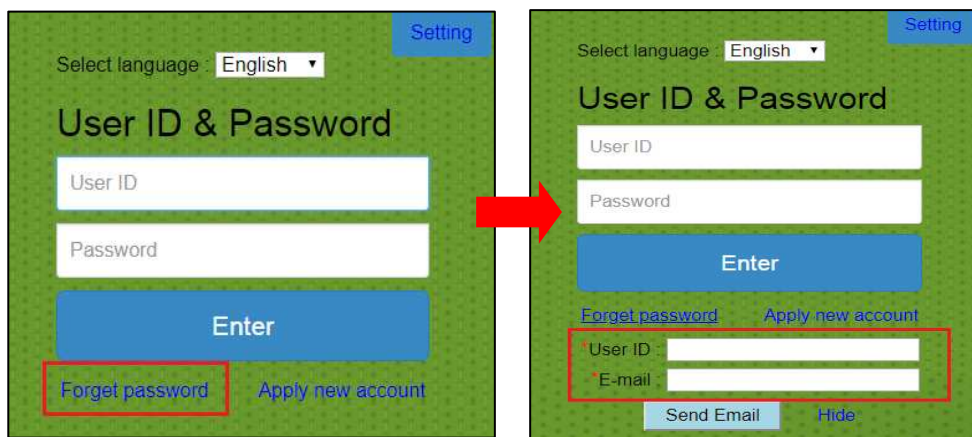
**2. Enter User ID and Pass word:** MIC will provide you registered ID and pass word, if you want to change the information, after login in, go to USER to make revision.

- a) **\*USER ID:** (Maximum 20 characters, the ID can only enter digit number, English alphabet, or”\_@ special characters).
- b) **\*Password:** (Maximum 20 characters, the ID can only enter digit number, English alphabet, or”\_@ special characters).
- c) **\*User name**
- d) **Office Tel.**
- e) **Mobile**
- f) **\*E-mail**

**NOTE:** \* is required filed.

### 3. Forget password?

If user forget password, click “forget password” on the page, the system will ask you to enter your User ID and E-mail, after clicking “Send Email” button, the system will send password to e-mail.



### 4. Device :

#### a) Icon Description :

- : First Page.
- : Previous Page. °
- : Next Page °
- : Last Page °
- Page 1 / 3 17 : Quick selecting page in drop-down list/ (Total page) (Total Devices).

Mac:  Prod:  Serial:  Label:

Quick searching the device by entering Mac/ Prod/Serial/Label:

Magnifier icon is “Enter key”; rubber icon is “clear key”.

: The device in Edit Data field is accord with the icon ahead of product no in Device list.

User Device Register Setting Display Logout

Device List (Click row bar to edit each data)

Page: 1 / 2 11

Mac: Prod: Serial: Label:

| #   | Mac          | Prod No   | Serial No | Label    | Register Date |
|-----|--------------|-----------|-----------|----------|---------------|
| ※ 1 | 20F85EBEXXXX | 98136WIFI | 141xxxx   | 人社二第五講堂  | 2016/01/01    |
| 2   | 20F85EBEXXXX | 98136WIFI | 141xxxx   | 人社二第六講堂  | 2016/01/01    |
| 3   | 20F85EBEXXXX | 98136WIFI | 141xxxx   | 管理學院第一講堂 | 2016/01/01    |
| 4   | 20F85EBEXXXX | 98136WIFI | 141xxxx   | 管理學院第二講堂 | 2016/01/01    |
| 5   | 20F85EBEXXXX | 98136WIFI | 141xxxx   | 人社二演藝廳   | 2016/01/01    |
| 6   | 20F85EBEXXXX | 98136WIFI | 141xxxx   | 人社二第四講堂  | 2016/01/01    |

Edit Data Save

\*Device Label: 人社二第五講堂 \*Serial No: 141896

\*Time Zone: UTC+08:00 Taipei Register Date: 2016/01/01

Time interval: 1 hr. for sending Email Refresh: 10 min.

| Sensor Code | Low Alarm | High Alarm | Unit |
|-------------|-----------|------------|------|
| 01 (Temp.)  | -40       | 125        | C    |
| 02 (RH)     | 0         | 99.9       | %    |

| Sensor Code | Low Alarm | High Alarm | Unit |
|-------------|-----------|------------|------|
| 03 (CO2)    | 0         | 1000       | ppm  |

※Each page can show at least 6 devices.

#### b) Edit Data :

Edit Data Save

\*Device Label: 人社二第五講堂 \*Serial No: 141896

\*Time Zone: UTC+08:00 Taipei Register Date: 2016/01/01

Time interval: 1 hr. for sending Email Refresh: 10 min.

| Sensor Code | Low Alarm | High Alarm | Unit |
|-------------|-----------|------------|------|
| 01 (Temp.)  | -40       | 125        | C    |
| 02 (RH)     | 0         | 99.9       | %    |

| Sensor Code | Low Alarm | High Alarm | Unit |
|-------------|-----------|------------|------|
| 03 (CO2)    | 0         | 1000       | ppm  |

- **Device Label:** User can edit the location of the device.
- **Serial No :** Locked.
- **Time zone:** Select time zone by pull-down menu.

**NOTE:** If time zone has been changed, the record time will be changed immediately.

- **Register Date:** The register date of the meter.
- **Refresh :** The monitor display will update per N minutes. (Time update interval is selectable).
- **Time interval for sending Email :** Pull down the menu and select time interval for sending alert message by e-mail.

※If the value keep exceeding or lowering than the alarm value, the system will keep sending alarm message to e-mail. To turn off e-mail alarm. Go to Device→Edit Data→Time interval for sending Email→0-no sending→Press “Save” button to save setting.

Hi, Dear Sir :

This is an automatic alert notification from [www.mic-meter.com](http://www.mic-meter.com).

your device label (98136WIFI) occurs following abnormal situation :

(Measured Date/Time : 2015/12/14 11:47:07)

Code01(Temp.) value 25.6 °C exceed the high alarm setting 20 °C.

This is just a notice email, Do not reply.

In addition, following abnormal situations have been happened :

Device label (98136WIFI) occurs following abnormal situation (Measured Date/Time : 2015/12/14 11:46:06)

Code01(Temp.) value 25.5 °C exceed the high alarm setting 20 °C.

Device label (98136WIFI) occurs following abnormal situation (Measured Date/Time : 2015/12/14 11:45:06)

Code01(Temp.) value 25.6 °C exceed the high alarm setting 20 °C.

Device label (98136WIFI) occurs following abnormal situation (Measured Date/Time : 2015/12/14 11:44:06)

Code01(Temp.) value 25.6 °C exceed the high alarm setting 20 °C.

(Warning e-mail)

Edit Data Save

\*Device Label: 人社二第五講堂 \*Serial No: 141896

\*Time Zone: UTC+08:00 Taipei Register Date: 2016/01/01

Time interval: 0 - not send for sending Email

Refresh: 10 min.

| Sensor Code | Low Alarm | High Alarm | Unit |
|-------------|-----------|------------|------|
| 01 (Temp.)  | -40       | 125        | C    |
| 02 (RH)     | 0         | 99.9       | %    |

| Sensor Code | Low Alarm | High Alarm | Unit |
|-------------|-----------|------------|------|
| 03 (CO2)    | 0         | 1000       | ppm  |

(turn off e-mail alarm)

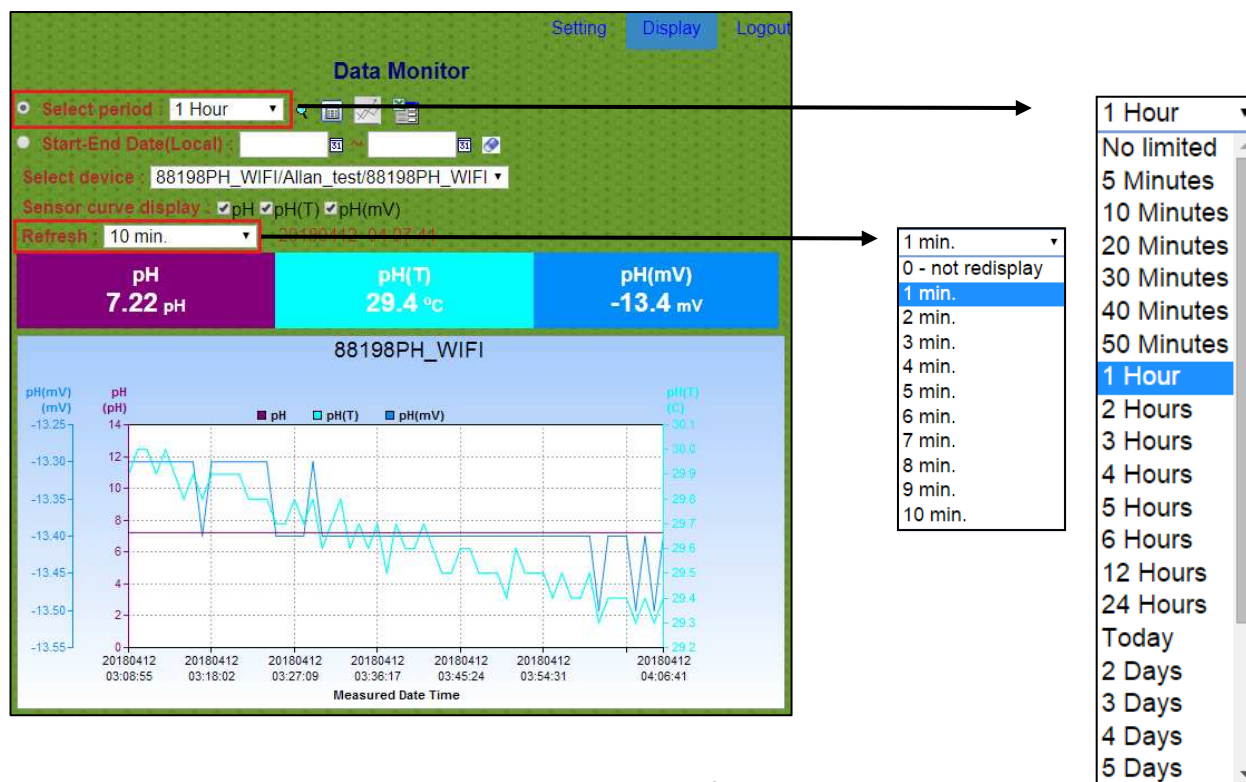
- **High/Low alarm setting:** Select High/Low parameters' alarm with figures.

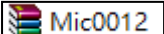
- **Setting range:**

| Product number | Sensor      | Range                                   |
|----------------|-------------|-----------------------------------------|
| 88198DH_WiFi   | DO          | 0~199.9% (In saturation); 0.0~20.0 mg/L |
|                | Temperature | 0~90℃                                   |

※Remember to press save icon  after edition completed.

## 5. Data Monitor:



- Select period** : Select the uploaded data within a period of time.
  - Select devices**: Pull down the menu or press Magnifier icon to know which devices recording within a period of time.
  - Sensor curve display** : It shows at most four parameters in the curve, if the meter has multi-function, select demanded sensors to show in the graph.
  - Refresh** : The display will update by the frequency set on the setting page. (0-not redisplay/1 min./2 min./3 min. /4 min. /5 min. /6 min. /7 min. /8 min. /9 min. /10 min.)
  - Show curve** : Select device and period, and then check sensors to be displayed, and then press “Show curve” icon  , now curve shows automatically.
- Move mouse to the curve, the sensor value of date and time will show on the screen.  
 ※It only shows previous sensor reading at the cross point of the graph. The display show at most 4 curves, if meter has multiple monitor function, user can select demanded sensor value by checking sensor curve display box .
- Show data**: Click “Show Data”  to get Data Table.
  - Download Excel** : Click excel icon  to download excel as Compressed Zip file. Unzip compressed file  , and open excel file to check recorded data. (Refer to the picture below).

**All data : Start DateTime 20160802 10:01:13 (3215 Records)**   
**Interval data : 20160804 15:14:20 ~ 16:14:20 (60 Records)** 

|    | A   | B        | C        | D        | E        | F        |
|----|-----|----------|----------|----------|----------|----------|
| 1  | Row | Date     | Time     | DO(mg/L) | DO(T)(C) | DO(%)(%) |
| 2  | 1   | 20181024 | 14:38:38 | 6.3      | 30.9     | 87.1     |
| 3  | 2   | 20181024 | 14:37:38 | 6.3      | 30.9     | 86.4     |
| 4  | 3   | 20181024 | 14:36:38 | 6.3      | 30.9     | 86.4     |
| 5  | 4   | 20181024 | 14:35:38 | 6.4      | 31.0     | 86.4     |
| 6  | 5   | 20181024 | 14:34:38 | 6.4      | 30.9     | 86.8     |
| 7  | 6   | 20181024 | 14:33:38 | 6.4      | 30.9     | 88.4     |
| 8  | 7   | 20181024 | 14:32:38 | 6.4      | 31.0     | 87.6     |
| 9  | 8   | 20181024 | 14:31:38 | 6.4      | 30.8     | 86.4     |
| 10 | 9   | 20181024 | 14:30:38 | 6.3      | 30.2     | 86.8     |
| 11 | 10  | 20181024 | 14:29:38 | 6.3      | 30.9     | 86.3     |
| 12 | 11  | 20181024 | 14:28:38 | 6.4      | 30.6     | 87.1     |
| 13 | 12  | 20181024 | 14:27:38 | 6.4      | 30.8     | 86.8     |
| 14 | 13  | 20181024 | 14:26:38 | 6.4      | 31.0     | 86.5     |
| 15 | 14  | 20181024 | 14:25:38 | 6.3      | 31.0     | 86.2     |
| 16 | 15  | 20181024 | 14:24:38 | 6.4      | 30.9     | 86.4     |
| 17 | 16  | 20181024 | 14:23:38 | 6.4      | 30.7     | 87.3     |
| 18 | 17  | 20181024 | 14:22:38 | 6.4      | 30.7     | 86.5     |
| 19 | 18  | 20181024 | 14:21:38 | 6.4      | 31.0     | 86.8     |
| 20 | 19  | 20181024 | 14:20:38 | 6.4      | 30.8     | 86.3     |
| 21 | 20  | 20181024 | 14:19:38 | 6.3      | 30.7     | 86.5     |

※Excel will show the data from the beginning to the date you press download icon.

**NOTE:** The uploaded data will be stored in the Cloud for only 6 months. Remember to download data every period of time if required. Otherwise, the data will be cleared after 6 months.

**8. Logout:** Pressing “Logout” in the upper right corner.

## ERROR CODES

| Code | Description                                                                                                                                                                                        |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0.00 | When reading shows 0, it indicates that the sensing needle is not installed correctly (e.g. insert two 3-pin needles or insert two 5-pin needles, please reinstall it before turning on the meter. |

## WARRANTY:

This instrument is warranted for two years from the date of purchase (One limited warranty applies to cables).

A Return Authorization letter must be issued before returning for any reason. This warranty does not apply to defects resulting from action of the user such as misuse, abuse, alteration neglect, improper wiring, improper maintenance or repair, or unauthorized modification, damage resulting from leaking batteries, operation outside of specification. During the warranty period the manufacturer reserved the right to decide either to repair or replace the product. The meters are to be returned along with good packing to prevent any damage in shipment and insured against possible damage or loss.

The two years' warranty doesn't apply to:

- Accessories and batteries (not covered by warranty).
- Soil sensor warranty is half a year (Under proper storage and usage only.)
- A claim is not acceptable for improper use (including adaptation to particular applications not foreseen in the instructions manual) or improper combination with incompatible accessories or equipment or by previous attempts for repair carried out by none skilled or unauthorized personnel.
- Sensor damaged by user improper use (Watering, Burning, Condensation....)