User Manual

987S8D_B Smart Soil Meter

7-in-1 Soil Meter: pH · EC · Temperature · Moisture · Nitrogen · Phosphorus · Potassium

Bluetooth APP · MIC Cloud · Alarm App



987S8D_B Smart Soil Meter and soil sensing probe

Package contents: 1 × meter + 2 × soil sensing probes + 32G SD card + 9V battery + 9V adaptor + brush

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Features & Specifications

987S8D_B Seven-in-one Handheld / On-line Soil Meter

Thank you for purchasing the MIC Smart Soil Meter. It measures 7 parameters at the same time: soil pH, EC (conductivity), soil temperature, soil moisture, and the nutrient indicators nitrogen (N), phosphorus (P) and potassium (K). Temperature and moisture can be read at both shallow and deep (EXT) levels.

Features:

- ✓ Rubber protective case; water-repellent meter and waterproof sensing needles.
- ✓ Built-in Bluetooth: upload readings to the MIC Cloud with the Bluetooth APP. The area or plant name can be edited, and a location QR code can be scanned – ideal for greenhouse agriculture.
- ✓ All readings are shown on the LCD; after Bluetooth pairing they are also shown live on your smartphone.
- ✓ Three measurement modes: (1) manual recording to SD card, (2) automatic recording to SD card, (3) Bluetooth upload to the cloud. Data can be shared to LINE, WeChat, WhatsApp, etc.
- ✓ Data saved on the SD card in CSV format (opens in Excel).
- ✓ Optional TV display or A3 LED signboard shows the value in real time.



Meter + Bluetooth APP

Standard Package Includes:

1. Meter (warranty 2 years), 170 × 65 × 23 mm
2. Protective case *
3. Soil temp./moisture/pH/EC/NPK sensing probe (5-PIN) × 2 (12-month warranty)
4. 32G SD card *
5. 9V alkaline battery *
6. 9V EU adaptor *
7. User manual
8. Brush

* Consumable parts – not covered by the warranty.

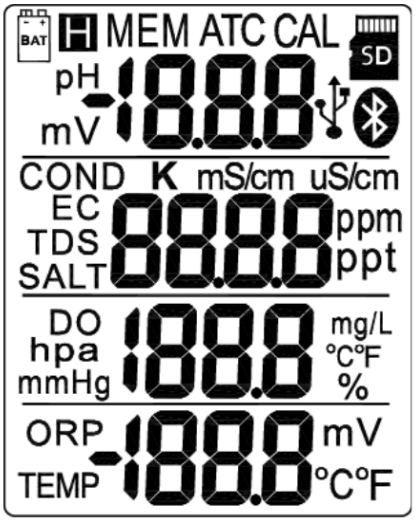
Specifications

Parameter	pH	EC	Temperature	Moisture (MC)	N / P / K
Sensor	Soil pH	Soil conductivity	Shallow / deep soil temp.	Shallow / deep soil moisture	Soil nutrients N, P, K
Range	3 ~ 9 pH	0 ~ 10 mS/cm	-40 ~ 80 °C	0 ~ 100 %	0 ~ 1999 ppm
Needle length	10 cm	10 cm	10 cm	10 cm	10 cm
Resolution	0.01 pH	0.01 mS/cm	0.1 °C	0.1 %	1 ppm
Accuracy	± 0.5 pH	± 2 % FS (0.2 mS/cm)	± 1.0 °C	± 5 % (10~55 %) ± 7 % (others)	± 10 % of rdg (1000 ppm = ±100 ppm)
Bluetooth	Yes – upload to MIC Cloud through the Bluetooth APP				
Memory	SD card (CSV files, up to 30,000 points per file)				
Power	9V alkaline battery or 9V 0.5A adaptor; auto power-off after 15 minutes				

IMPORTANT – Measuring range

- All needles must be fully buried in, or inserted into, the measured soil.
- In frozen soil layers the moisture reading is low and inaccurate; the user must compensate.
- Factory default is for ordinary yellow, black and red soil. Not suitable for the absolute moisture of saline-alkali land, sandy land or powdery materials with high salt content.

Display, Buttons & Power



Full display



Operation panel

Button Functions:

Button	Short press	Long press / combination
PWR	Power on; start a new measurement.	Long press: power off. HOLD + PWR: disable auto power-off.
SET	Select AUTO / USER mode; toggle N → P → K → EXT → Air readings.	Long press: sampling rate → clock setting. SET + ADJ, then PWR (meter off): calibration.
HOLD (+)	Freeze readings (H icon); increase value in settings.	—
CAL	Turn the battery-voltage detection on / off.	—
ADJ (–)	Decrease value in settings.	Long press: backlight on / off.
MODE	Manual mode: save one reading to the SD card.	MODE + UNIT (hold): save the setting – display shows “SA”.
UNIT	Settings: move to the next field (month, day, hour…).	

Power:

1. 9V alkaline battery (rechargeable batteries can be purchased by the customer).
2. 9V 0.5A adaptor – recommended for long-term use and SD card recording.

IMPORTANT – Batteries

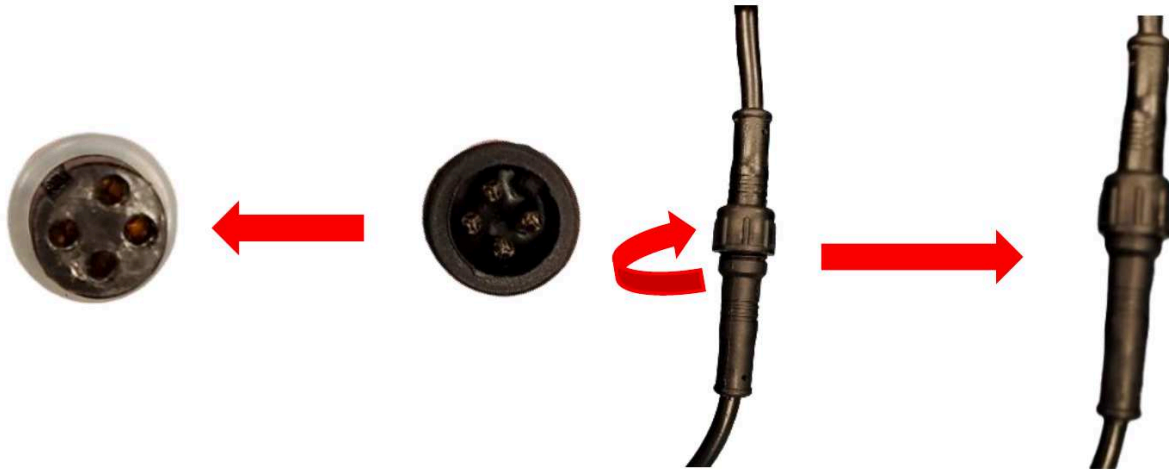
- Always use fresh batteries of the same brand and power, otherwise the meter may show erratic readings or the batteries may leak. The warranty is void if this notice is not followed.
- Remove the batteries when the meter is not in use.
- When the voltage is lower than 6.4 V, the battery icon appears and SD recording stops (see P9).

Probe Installation

IMPORTANT – Align the PINs first
Align the position of the PINs before inserting. If excessive force bends or distorts a pin, the damage is **not covered by the warranty**.

1. Connect the probe cable

Align the PINs and insert the connector, then tighten the screw collar **clockwise**.



Align PINs → insert → tighten clockwise

2. Connect the probe to the meter

Insert the soil sensing probe into the Mini DIN socket on the **right side of the top cover**, then tighten the nut clockwise.



Mini DIN socket on the top cover

3. Soil surface measurement

- Choose a suitable location; avoid rocks so the needles do not hit hard objects.
- Dig away the topsoil to the depth you want to measure, then insert the probe **vertically**.
- Take several measurements within a small area around each measuring point.

> **Very loose soil (e.g. peat soil):** put a soil sample into a bottle or container and compress it firmly before testing. The temperature and moisture readings are then for reference only.



Field / container measurement

Subsoil Measurement & Notes

4. Subsoil measurement

Dig a vertical pit with a diameter larger than **20 cm**. Insert the sensor needles **horizontally** into the pit wall and refill the pit tightly.

After the readings stabilize, the meter can record data for many days. Use automatic recording to store the data on the SD card (see P10–P11), with the adaptor connected.



Probes in the pit wall

Measurement Notes:

#	Point	What to do
1	**Insert straight**	Insert the probe parallel into the soil. Do not shake it while inserting – the steel needles may bend and be damaged.
2	**Full contact**	The needles must be in full contact with the soil; compact the soil around them for accurate readings.
3	**Hard lumps**	If there are hard lumps or foreign objects in the soil, choose another location.
4	**Sunlight & lightning**	Avoid direct sunlight on the probe (raises the temperature reading). In the field, take care to prevent lightning strikes.
5	**Soil moisture**	For pH, EC, N, P and K the soil must be moist (more than 20 %).
6	**Storage**	Wipe the probe with a paper towel and store it in a dry place at 0 ~ 60 °C.
7	**Probe in the air**	When the meter is on, do not leave the probe in the air for a long time – RF electromagnetic radiation in the air affects it.

Probe Care:

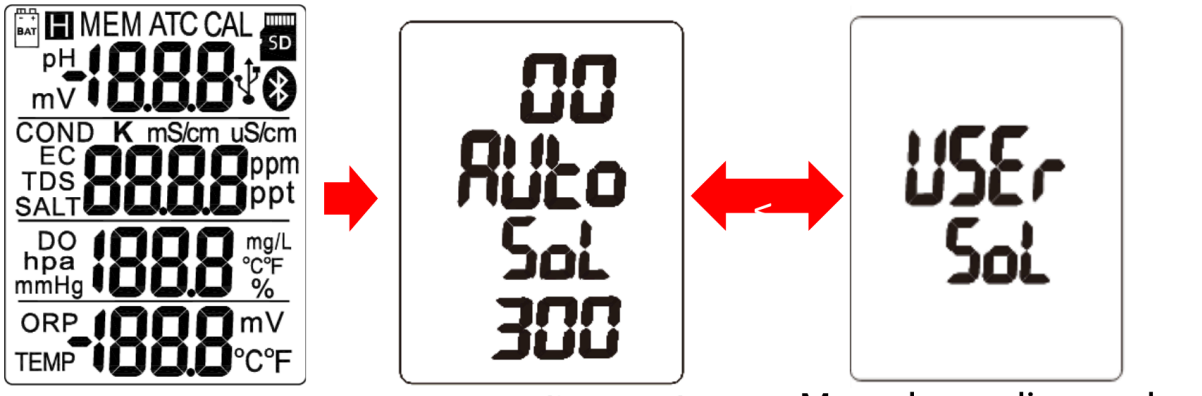
- Clean the needles with the supplied brush after each use; do not use solvents.
- Keep the connector dry and fit the protective cap when the probe is disconnected.
- If readings show 0.00, check that the probe is installed correctly (see Error Code, P27).

Note – Probe warranty

The soil sensing probe is a wear part with a shorter warranty than the meter. Damage caused by improper use (watering, burning, condensation, bent needles) is not covered.

Power On, Modes & Auto Recording

Function	How
Power on	Short press **PWR**; the meter enters AUTO / USER selection.
Mode selection	Short press **SET** to switch between **AUTO** (automatic recording) and **USER** (manual recording). "SoL" = soil; "300" = sampling rate in seconds.
Auto power-off	The meter turns off after 15 minutes without use. To disable it, press **HOLD + PWR**: "n" shows briefly and the meter stays on. (V03 = program version.)
Battery detection	Short press **CAL** to turn voltage detection on / off (battery icon). Below 6.4 V a reminder page keeps appearing.

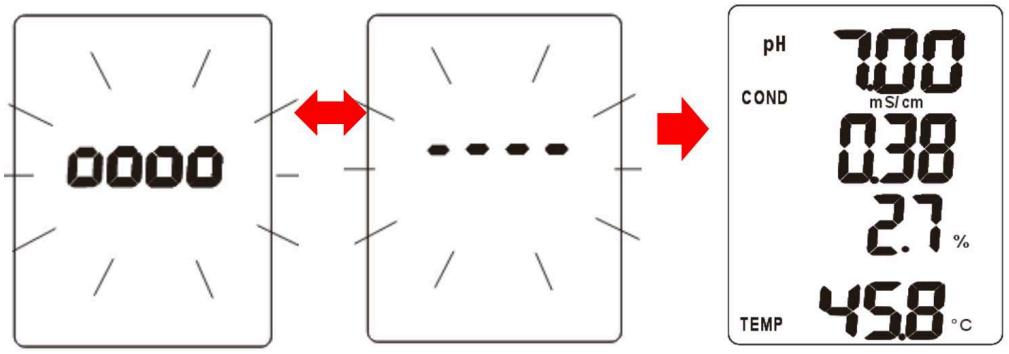


<FULL DISPLAY> <Auto recording mode> <Manual recording mode>

Full display → AUTO mode ⇄ USER mode

Auto Recording Mode

After selecting AUTO, briefly press **PWR**. The display shows **0000** and **----** alternately while measuring (about 10 seconds), then the readings appear. Long press **PWR** to turn the meter off.



Measuring (≈ 10 s) → readings

Hold & Backlight

- **Freeze readings:** press **HOLD** – the **H** icon appears at the top left. You can still press **SET** to view N, P, K, moisture and humidity.
- **Backlight** (for measuring at night): long press **ADJ** to turn the light on / off.

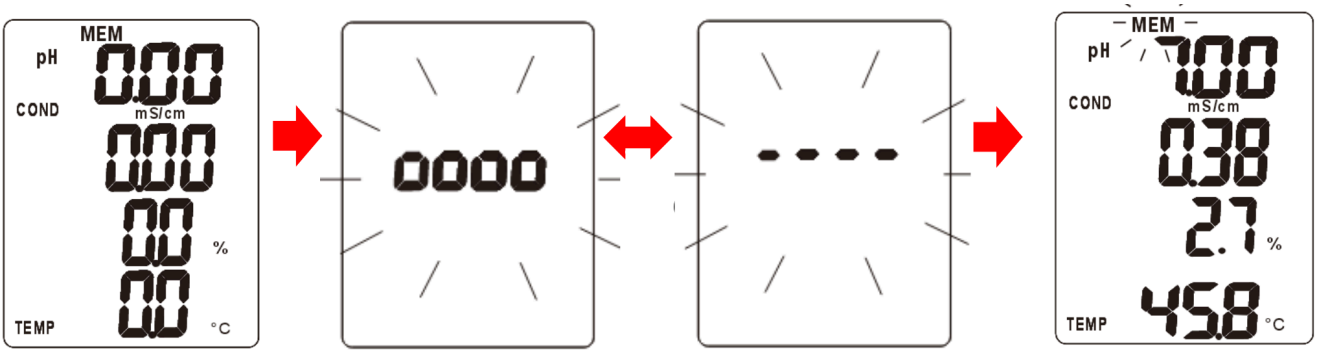
Note

If the readings do not change during measurement, check whether the **HOLD** button was pressed by accident.

Manual Recording & Readings

Manual Recording Mode (USER)

1. Select **USER** and briefly press **PWR**: the readings show 0. The **MEM** icon means manual recording mode.
2. Short press **PWR** to start a measurement (about 10 seconds).
3. Short press **MODE** to save the point to the SD card. Press **PWR** again for a new reading.

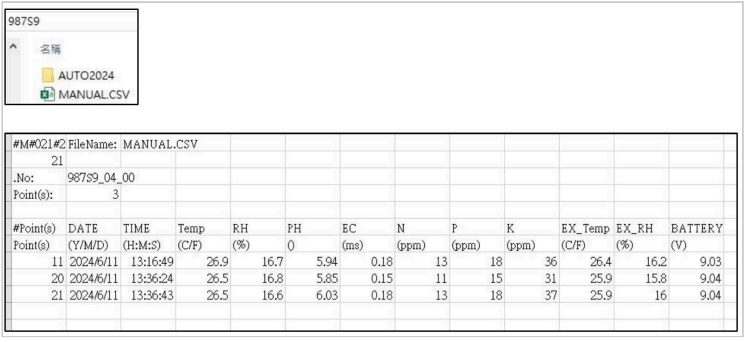


USER mode: 0 → measuring → reading saved (MEM)

Saved file

Manual readings are saved on the SD card as **MANUAL.CSV**. Before a new series, rename the old file on the PC so it is not overwritten.

Delete history records: delete the MANUAL.CSV file on the SD card.



#M#021#2 FileName: MANUAL.CSV

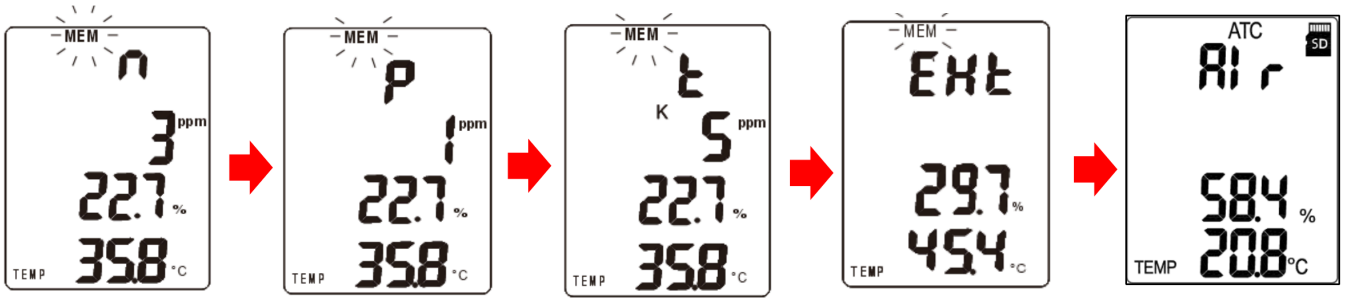
21												
.No:	987S9_04_00											
Point(s):	3											
#Point(s)	DATE	TIME	Temp	RH	PH	EC	N	P	K	EX_Temp	EX_RH	BATTERY
Point(s)	(Y/M/D)	(H:M:S)	(C/F)	(%)	()	(ms)	(ppm)	(ppm)	(ppm)	(C/F)	(%)	(V)
11	2024/6/11	13:16:49	26.9	16.7	5.94	0.18	13	18	36	26.4	16.2	9.03
20	2024/6/11	13:36:24	26.5	16.8	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

MANUAL.CSV on the SD card

Toggle Readings

In normal measurement, short press **SET** to step through the readings:

1	2	3	4	5
Nitrogen + moisture + temp.	Phosphorus + moisture + temp.	Potassium + moisture + temp.	EXT – deep soil moisture + temp.	Air – ambient temp. + humidity

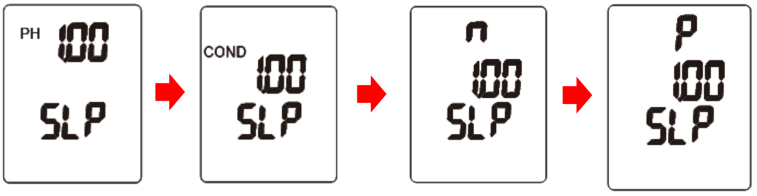


SET: N → P → K → EXT → Air

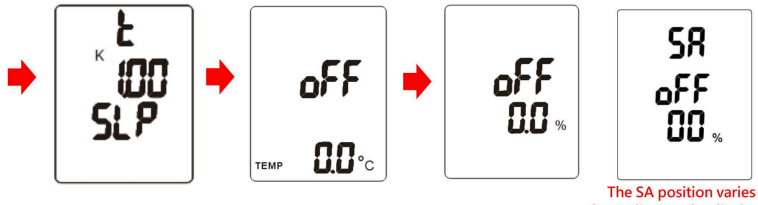
Calibration

If the reading differs from a certified reference material, the coefficients can be adjusted to compensate the readings.

1. With the meter **off**, hold **SET + ADJ** and short press **PWR** – pH coefficient adjustment.
2. Short press **SET** to move to Cond., N, P, K, soil humidity and temperature compensation.
3. Short press **HOLD** to increase, **ADJ** to decrease the value.
4. Hold **MODE + UNIT** to save – the display shows **"SA"**.
5. Long press **PWR** to exit.

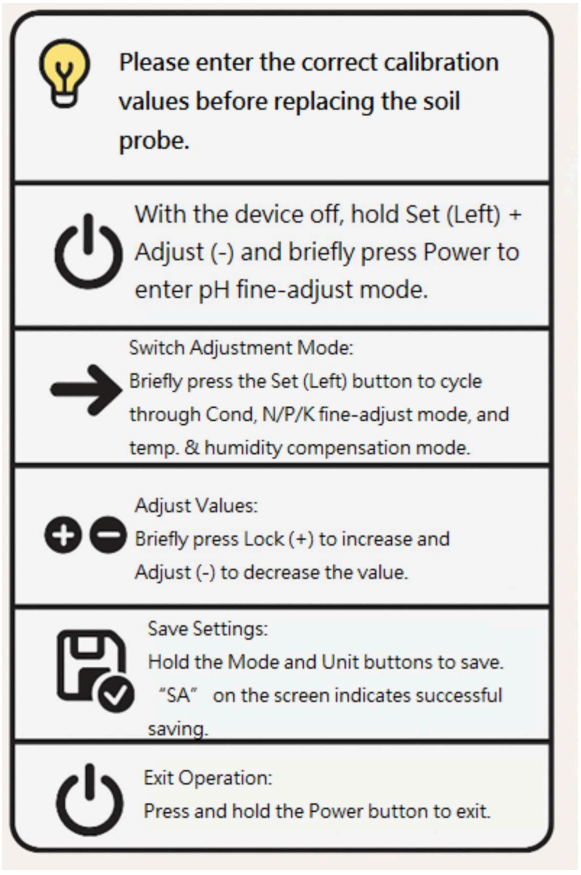


pH → COND → N → P



The SA position varies depending on the display parameter.

K → temp. → humidity → saved (SA)



Calibration quick guide

Spare Probe Calibration Values

The main probe is calibrated at the factory. If you replace it with the spare probe, enter the spare probe values below.

Parameter	Probe S/N	pH	EC	Nitrogen (N)	Phosphorus (P)	Potassium (K)
Main probe (pre-set at factory)	S5260608004	1.00	0.74	1.07	0.30	0.25
Spare probe (set manually)	S5260608016	1.19	0.55	0.86	0.25	0.20

Note
If your soil is not potting soil and the readings still show a large deviation after entering these values, reset the calibration values to **0**.

SD Card Datalogging

IMPORTANT – SD icon

- The **SD** icon flashes **once** each time a reading is recorded successfully.
- If it flashes **several times**, the recording failed – check whether the battery is weak or the SD card is damaged.

SD Card Information

a. Power the meter with the 9V battery or the 9V adaptor (adaptor recommended for recording).
b. Insert the SD card into the slot on the **left side** of the meter, label side facing the front of the meter. The **SD** icon appears at the top right of the screen.
c. Format the SD card before using it for the first time.



Low battery

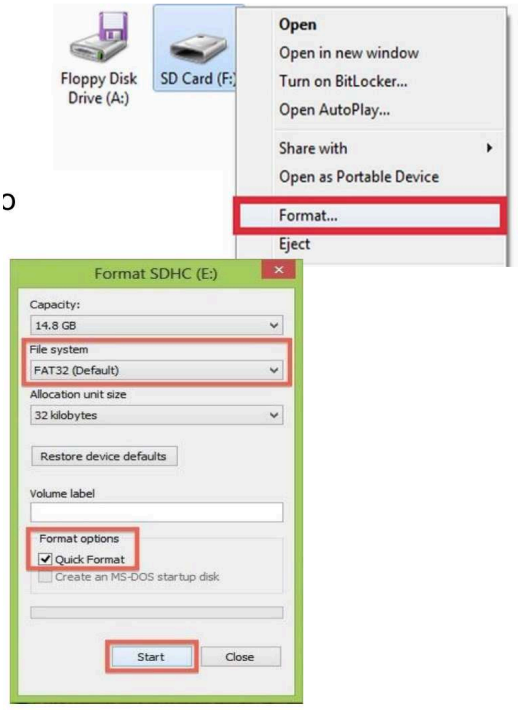
Low Battery

Below 6.4 V the battery icon and **bAt** appear: the power is not enough for SD recording, but the other functions still work. Replace the batteries or plug in the adaptor to record again.

SD Card Formatting (Windows)

Before formatting: make sure the device supports SD, SDHC or SDXC cards, and back up your data – formatting erases everything on the card.

a. Open **File Explorer → This PC** (Windows 10/11) or **Computer** (Windows 7/8).
b. Right-click the SD card (removable drive) and select **Format**. Keep Capacity and Allocation unit size at default.
c. Select **FAT32** as the file system so it can be read by the meter, phones, Windows, Mac and Linux.
d. Tick **Quick Format** and click **Start**. Close the window when finished.



Format → FAT32 → Quick Format → Start

Automatic Datalogging – Clock & Sampling Rate

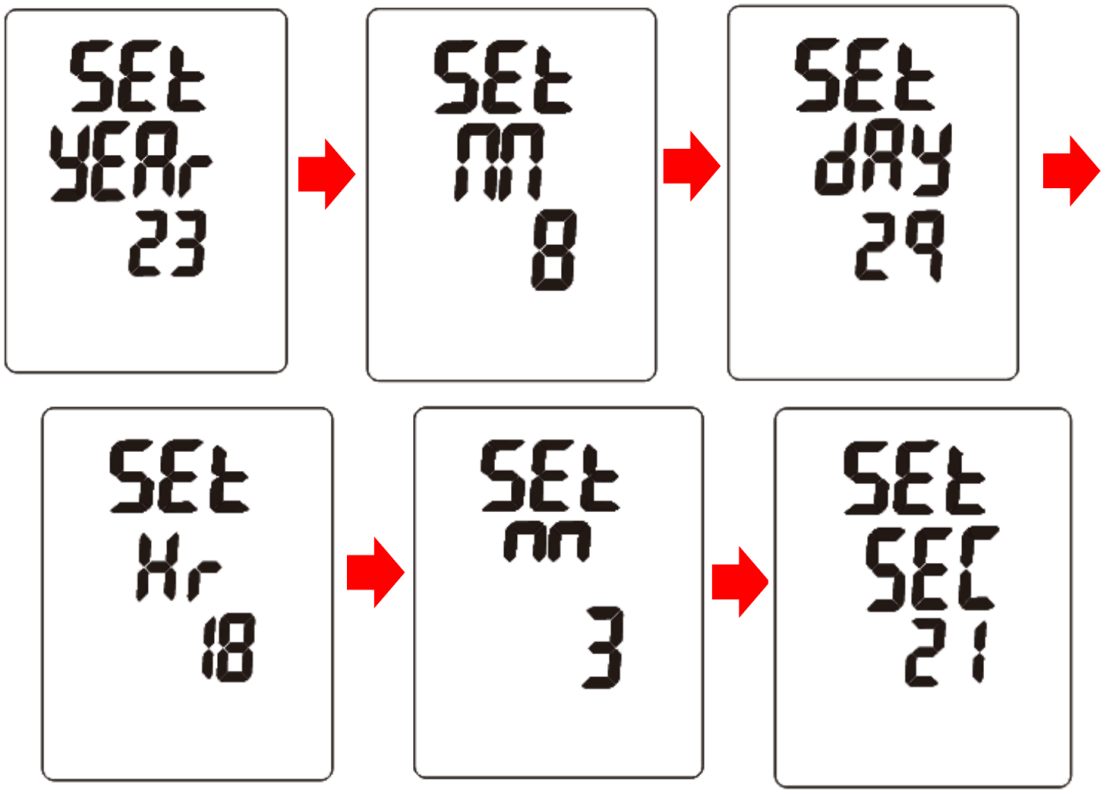
The meter stores a reading on the SD card at the selected sampling rate (default **300 seconds**). For long-term recording, connect the adaptor.

a) Set the datalogger clock

Set the clock correctly so the recorded date and time are accurate.

1. In **AUTO** mode, long press **SET** to enter the sampling rate setting, then long press **SET** again to enter the **YEAR** setting.
2. Short press **UNIT** to move to month, day, hour, minute and second.
3. Hold **MODE + UNIT** to save – "SA" shows. Long press **SET** to return to measurement.

HOLD	ADJ	SET	CAL
↑ increase value	↓ decrease value	← go forward	→ go backward



Year → month → day → hour → minute → second

To leave the setting page without saving, power off the meter directly.

b) Set the sampling rate

1. With the meter on, long press **SET** to enter the sampling setting.
2. Short press **HOLD** to increase, **ADJ** to decrease.
3. Hold **MODE + UNIT** to save – "SA" shows. Long press **SET** twice to return to measurement.

Available sampling rates (seconds)	15	30	60	120	300 (default)	600	900	1800

Start Datalogging & Transfer to PC

c) Start datalogging

1. With the SD card inserted, recording starts automatically and the **SD** icon flashes at each reading (e.g. every 15 seconds at a 15 s sampling rate).
2. When the SD icon disappears, recording has stopped or no SD card is inserted.
3. On first use a folder named after the model number is created, with an AUTO+YEAR folder inside – e.g. **/987S9/AUTO2023/**.
4. Each recording session creates a folder and a CSV file named month/day/hour/minute – e.g. **/987S9/AUTO2023/04051858/04051858.csv**.
5. Each CSV file holds up to 30,000 points; a new file is then created automatically in the same folder – e.g. **.../12261858/12262005.csv**.

Note	Details
1	Recording stops when you replace the probe, remove the SD card, batteries or adaptor, or change the sampling rate.
2	After recording stops, the next session is saved in a new month/day/hour/minute folder.
3	When the year or the model number changes, a new folder is created accordingly.
4	The SD icon flashes once per recorded point. If it flashes **three times**, the battery is low and recording will fail.

SD Data Transfer to PC

a. Remove the SD card from the meter and insert it into the PC's SD slot or a card reader.
b. Open the CSV file in the folder with Excel.
c. The file shows the file name, product number, sampling rate, number of points, start / end time, then the date, time and readings of each point.
d. A value of "0" means no measured value during that 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 ▲

Automatic datalogging CSV file opened in Excel

Bluetooth APP – Download & Pairing

1. Free download

Scan the QR code or open the link to download the **Handheld / Online IoT Water Quality** APP (store name: 手持/在線 iOT水質寶):

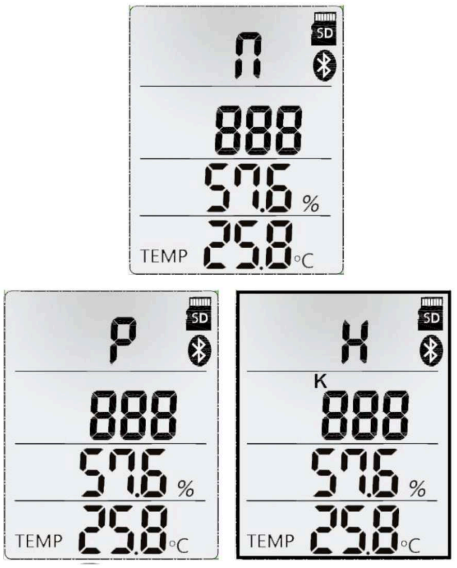
Android	https://reurl.cc/W18lKy
iPhone	https://reurl.cc/O4Rq9y



App Store · APP icon · Google Play

2. Pair and measure

1. On the phone, allow the APP **location** and **camera** permissions, and turn on **Bluetooth** and **GPS**.
2. Turn on the meter, open the APP and tap **Connect Bluetooth**.
3. Tap the soil meter in the list (name and MAC), then tap the tool icon to enter measurement mode. The readings appear after detection.
4. Enter the **planting location / area name** in the remark field (max. 10 characters), or scan a location QR code.
5. Tap Upload to send the reading to the MIC Cloud – "Upload successful" pops up. Tap Upload again for every new record.
6. **iPhone only:** enter the 12-digit MAC code printed on the silver label on the side of the meter (first time only).
7. Tap Data to view the history, share it to LINE or save it as an Excel file.
8. Tap Clear to delete all data in the APP; tap the red power button to close the APP.



Bluetooth icon on the LCD

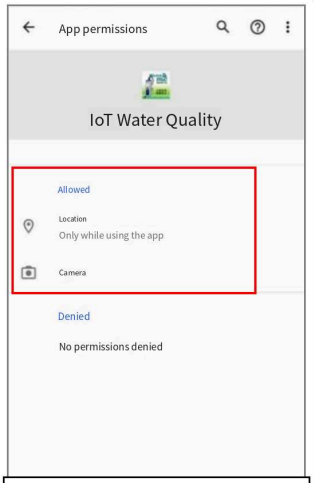
3. How the data flows

Soil meter — Measure pH, EC, temp., moisture, N, P, K → **Bluetooth APP** — Add location / photo, tap Upload → **MIC Cloud** — Curves, data table, Excel, alarm values → **E-mail / Alarm App** — Notification when a value is out of range

Note

The soil meter sends data to the cloud only when you tap **Upload** in the APP. Each upload also records the phone's GPS position (longitude / latitude), which is shown in the cloud data table (P22).

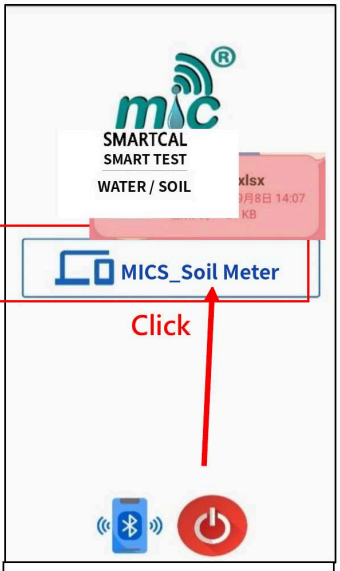
Bluetooth APP – Steps 1–8



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



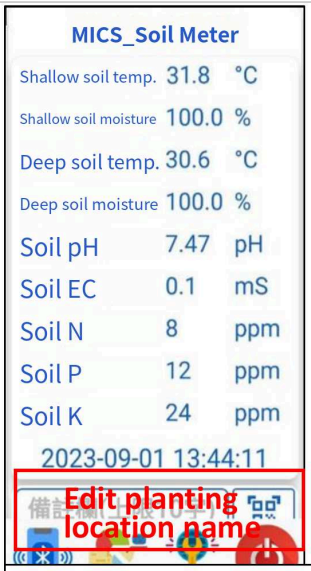
Step 2 Turn on APP to connect Bluetooth device



Step 3 Click soil meter Bluetooth device



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



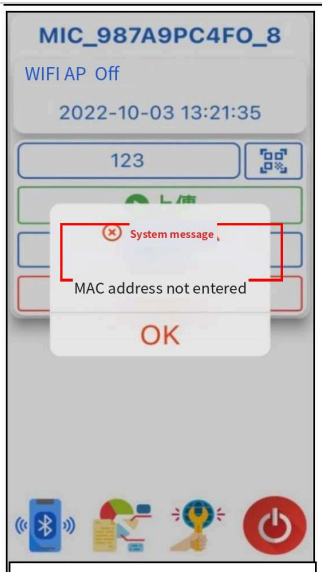
Step 5 Enter " Planting location" and press upload button



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 1	Allow location and camera permissions for the APP.	**Step 5**	Enter the planting location and tap Upload.
Step 2	Open the APP and tap Connect Bluetooth device.	**Step 6**	Or scan the location QR code.
Step 3	Tap the soil meter Bluetooth device.	**Step 7**	Upload a planting photo (hold the phone horizontally).
Step 4	Tap the tool icon to view the readings.	**Step 8**	iPhone: enter the MAC number the first time.

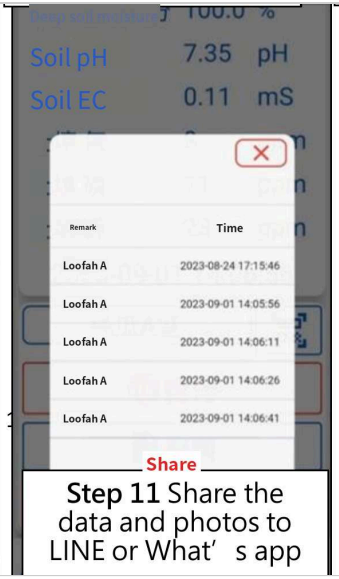
Bluetooth APP – Steps 9–16



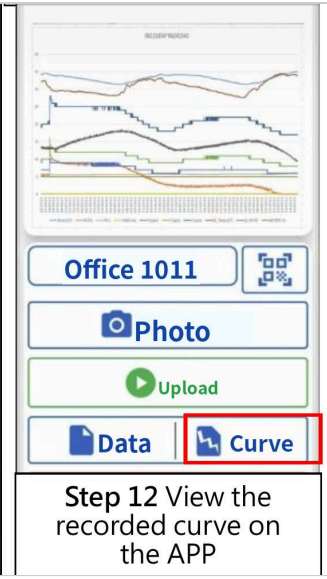
Step 9 MAC Address Located on the device' s side silver label (12 digits): XXXXXXXXXXXX.



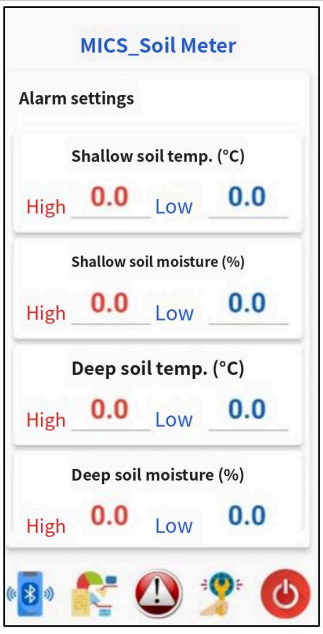
Step 10 View historical data



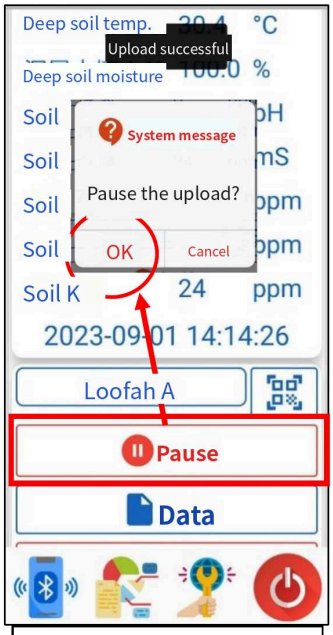
Step 11 Share the data and photos to LINE or What' s app



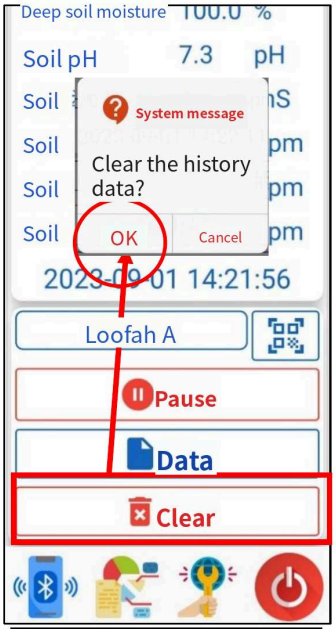
Step 12 View the recorded curve on the APP



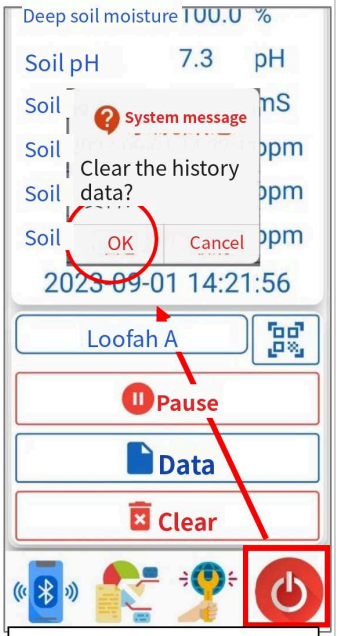
Step 13 soil temperature and moisture threshold value can be set



Step 14: Pause Button Stops data upload.



Step 15 Click delete button to clear historical values



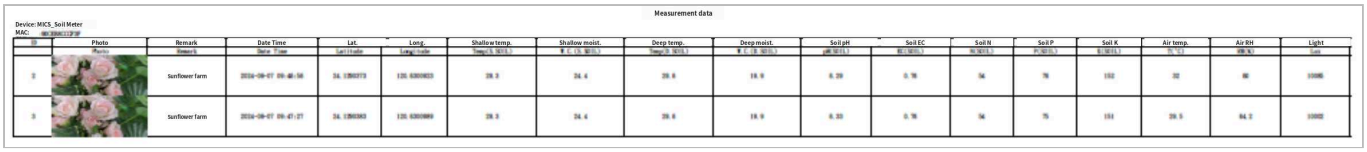
Step 16 Turn APP

Step 9	The MAC address is on the silver label on the side of the meter (12 digits).	**Step 13**	Set the soil temperature and moisture alarm thresholds.
Step 10	View the historical data.	**Step 14**	Pause stops the data upload.
Step 11	Share the data and photos to LINE or WhatsApp.	**Step 15**	Clear deletes the historical values.
Step 12	View the recorded curve in the APP.	**Step 16**	Tap the power button to close the APP.

Shared Data & Location QR Code

Shared data (Step 11)

The shared file lists each record with its photo, location name, date and time, MAC and all readings:



Example of shared data

Tips for photos (Step 7)

Hold the smartphone **horizontally** when taking the planting photo, so the uploaded picture has the correct direction.

How to make a location QR code (Step 6)

Make a QR code for each fixed measuring location. When you measure there, scan it (or open it from the photo album) and the location name is filled in automatically.

1. Go to the QR code generator website: **https://qr.ioi.tw/zh/**
2. Select the QR code category **Text only**.
3. Enter **Mac** + the 12-digit MAC + _ + the planting name or location, e.g. **MacXXXXXXXXXXXX_Lisianthus**.
4. Generate and save the QR code; print it and place it at the measuring location.



Text-only QR code: Mac + MAC + _ + location name

※ You can also ask your distributor to make the QR code for you.

Cloud Overview & Log in

The MIC Cloud (MIC METER Sensor Monitoring System) stores the readings uploaded by the Bluetooth APP, so you can check every measuring point from anywhere. Use the cloud to:

- View the latest readings of each soil meter.
- View history data as **curves** or a **data table**, and export it to **Excel**.
- Set high/low alarm values and how alarms are sent (**e-mail** or the **Alarm App**).

Log in

1. Open the cloud website in a browser (Chrome recommended):
   https://www.mic-meter.com/Micc/Home/Login
2. Select the language with the **English** menu at the top left.
3. Enter the **User ID** and **Password** provided by MIC (MIC registers the account before shipment).
4. Tick **Remember account** if required, then click **Sign in**.

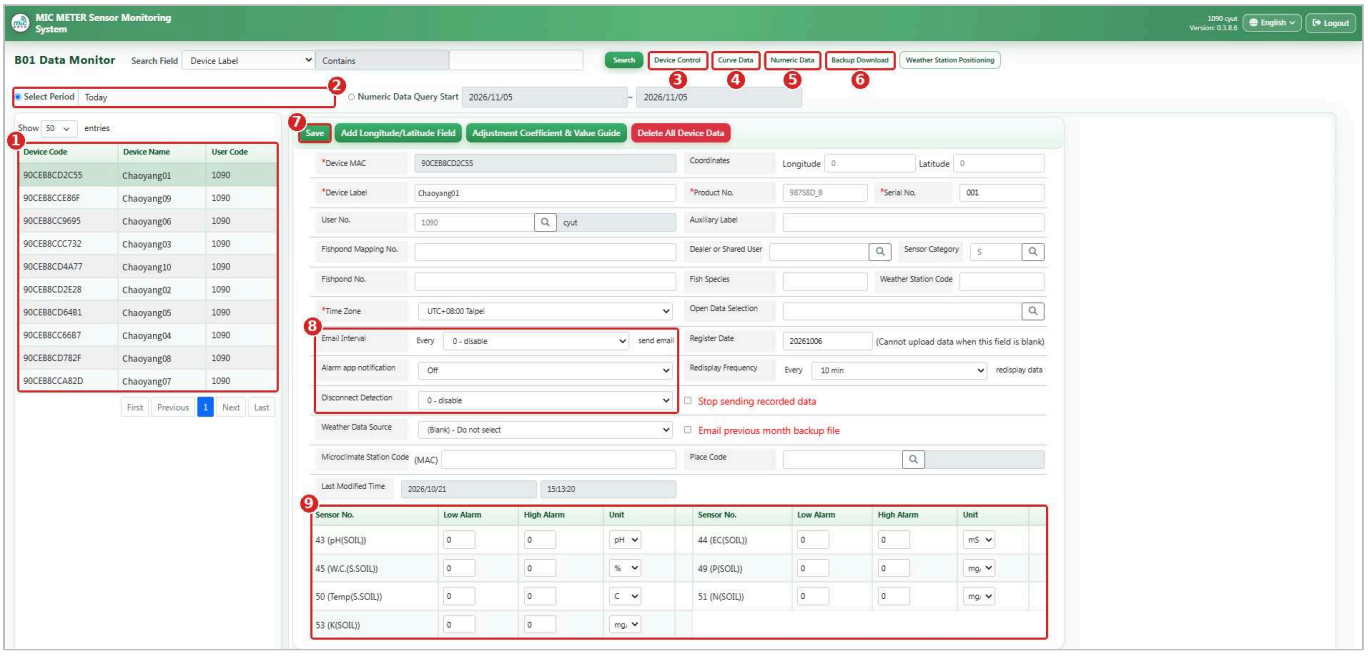


Login page

Forgot password sends a reset to your registered e-mail; **Apply for new account** is for new users. The same User ID and Password are used for the Alarm App.

B01 Data Monitor

After logging in, the **B01 Data Monitor** page opens. The left side lists all your devices; the right side shows the selected device.



B01 Data Monitor – Device Control page

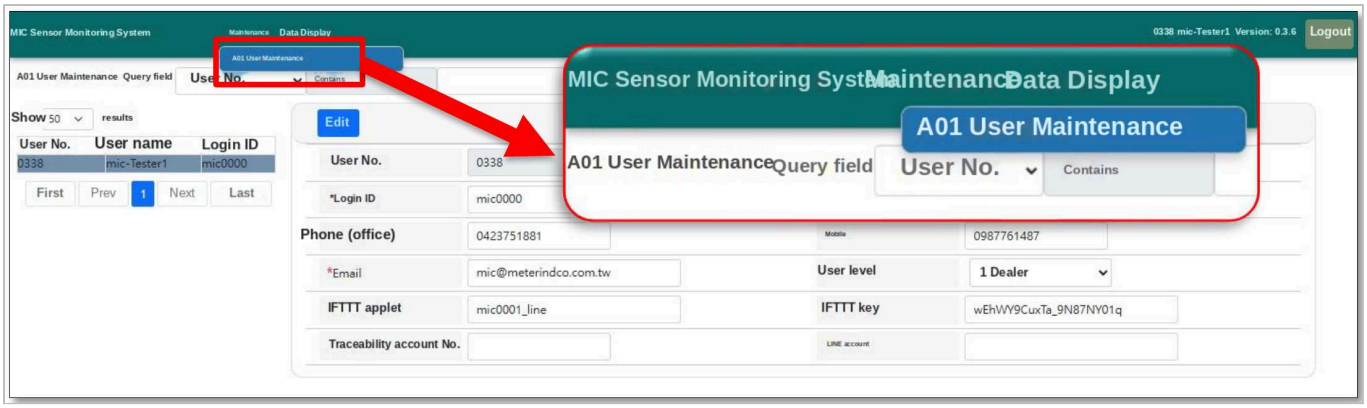
1	**Device list** – click a device to select it.	6	**Backup Download** – download backup files.
2	**Select Period** – Today … 3 months, or a start/end date.	7	**Save** – save the device settings.
3	**Device Control** – edit the device settings (P18).	8	**Alarm sending** – e-mail, app, disconnect (P18).
4	**Curve Data** – view the curves (P21).	9	**High / Low alarm** values per sensor (P19).
5	**Numeric Data** – data table and Excel (P22).		Logout – top right corner.

A01 User Maintenance – Account & E-mail

Alarm e-mails and the monthly backup file are sent to the **e-mail address in your user data**. Check it before you set any alarm.

Open the user data

1. In the top menu, click **Maintenance → A01 User Maintenance**.
2. Click your user in the list, then click **Edit**.
3. Change the fields you need, then click **Save**.



Maintenance → A01 User Maintenance

Field	Description
User No.	Generated by the system – cannot be changed.
Login account (ID)	Max. 20 characters: numbers, letters and the symbols "_" and "@". A warning appears if a character is not allowed.
Password	Editable. After changing the account or password, use the new ones at the next login (also in the Alarm App).
User name	Name shown after login. Editable.
Phone (office) / Mobile	Contact numbers. Editable.
Email	**Address that receives the alarm e-mails** (P20) and the monthly backup file. Editable.

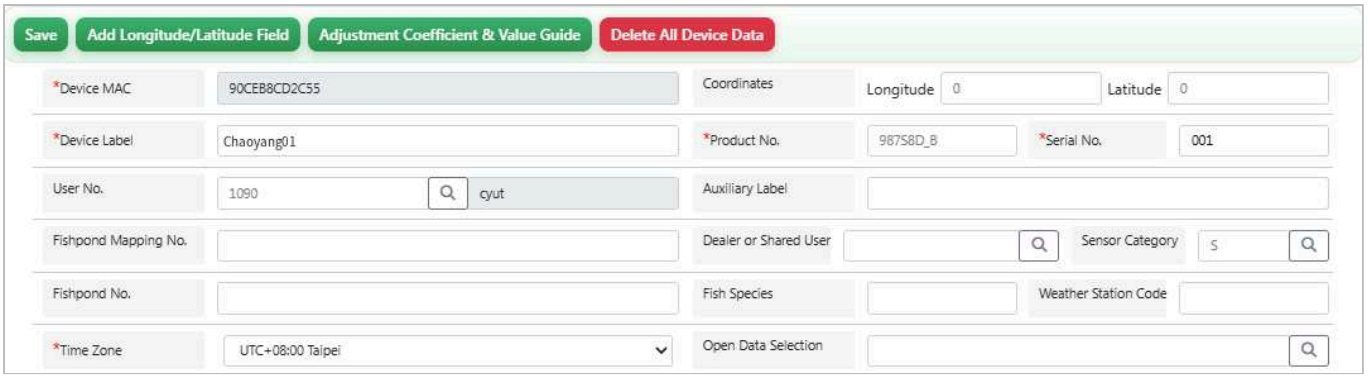
Monthly data backup by e-mail

In **Device Control**, tick **Email previous month backup file** and click **Save**. Every month the data of the previous month is e-mailed to the address above, so you always keep a copy without exporting by hand.

> **Note**
> The account and password are created by MIC before shipment. The menu layout may differ slightly by cloud version. If you cannot change your e-mail address, contact MIC (official LINE **@meter1718**).

Device Control – Settings & Alarms

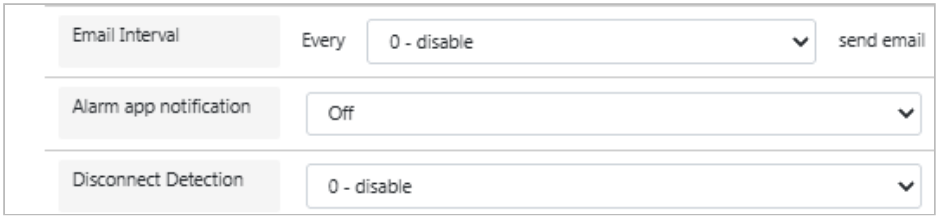
Select a device in the list and click **Device Control**. Fields marked * are required. Click **Save** after every change.



Device settings

Field	Description
Device MAC / Product No.	Device ID and model (987S8D_B) – fixed by MIC.
Device Label	Name of the device or measuring location (e.g. Chaoyang01). Shown in the device list and on the curve.
Time Zone	Select the time zone. If it is changed, the record time changes immediately.
Register Date	Registration date of the meter. **Data cannot be uploaded when this field is blank.**
Redisplay Frequency	How often the page refreshes the data (e.g. every 10 min).
Coordinates	Longitude / latitude of the device (optional).
Stop sending recorded data	Tick to stop the cloud from sending this device's recorded data.
Email previous month backup file	Tick to receive last month's data file by e-mail every month (P17).

Alarm Sending Settings

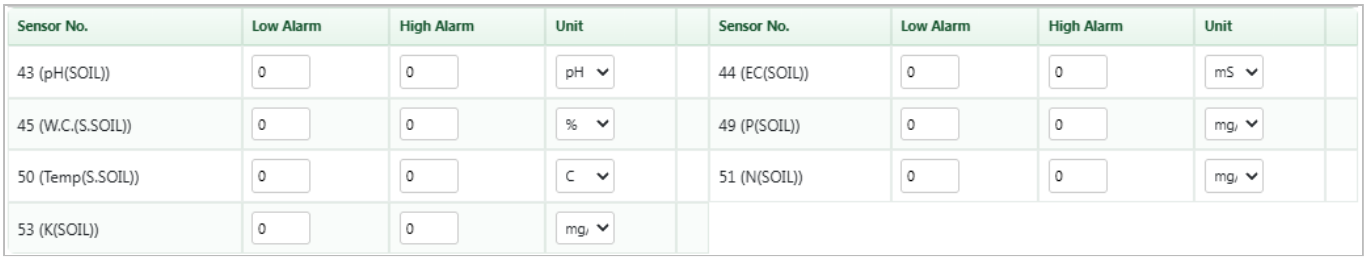


Email Interval · Alarm app notification · Disconnect Detection

Setting	Options	What it does
Email Interval	**0 – disable** or a time interval	While a reading stays above the High Alarm or below the Low Alarm, an alarm e-mail (P20) is sent at the selected interval to the A01 e-mail address. **0 – disable** = no alarm e-mail.
Alarm app notification	**Off / On**	**On** sends this device's alarm notifications to the Alarm App on your phone (P25–P26).
Disconnect Detection	**0 – disable** or a time	If no data is received within the selected time, a **Device Disconnect Alert** is sent. **0 – disable** turns this alert off.

Device Control – High / Low Alarm

At the bottom of the Device Control page, enter the **Low Alarm** and **High Alarm** value and select the unit for each sensor. An alarm is triggered when an uploaded reading is below the Low Alarm or above the High Alarm. Leave both at **0** for no alarm.



High / Low alarm settings of the soil meter

Sensors and setting range (987S8D_B)

Sensor No.	Sensor	Unit	Setting range	High alarm	Low alarm
43	pH(SOIL) – soil pH	pH	3 ~ 9	V	V
44	EC(SOIL) – soil EC	mS	0 ~ 10	V	V
45	W.C.(S.SOIL) – shallow soil moisture	%	0 ~ 100	V	V
50	Temp(S.SOIL) – shallow soil temperature	°C	-40 ~ 80	V	V
51	N(SOIL) – soil nitrogen	mg/kg	0 ~ 1999	V	V
49	P(SOIL) – soil phosphorus	mg/kg	0 ~ 1999	V	V
53	K(SOIL) – soil potassium	mg/kg	0 ~ 1999	V	V

V = available. mg/kg in the cloud equals ppm on the meter.

Example – receive an e-mail when the soil is too dry

1. Device Control → **45 (W.C.(S.SOIL))** → Low Alarm **30**, unit **%**.
2. **Email Interval** → select a time interval (e.g. 1 hour).
3. Optional: **Alarm app notification** → **On** to also get a phone notification.
4. Click Save.

Turn the alarms off

- **Stop alarm e-mails:** Email Interval → **0 – disable** → Save. While a value keeps exceeding the alarm, e-mails are sent repeatedly until this is set.
- **Stop phone notifications:** Alarm app notification → **Off** → Save.

IMPORTANT – Disconnect Detection for the soil meter

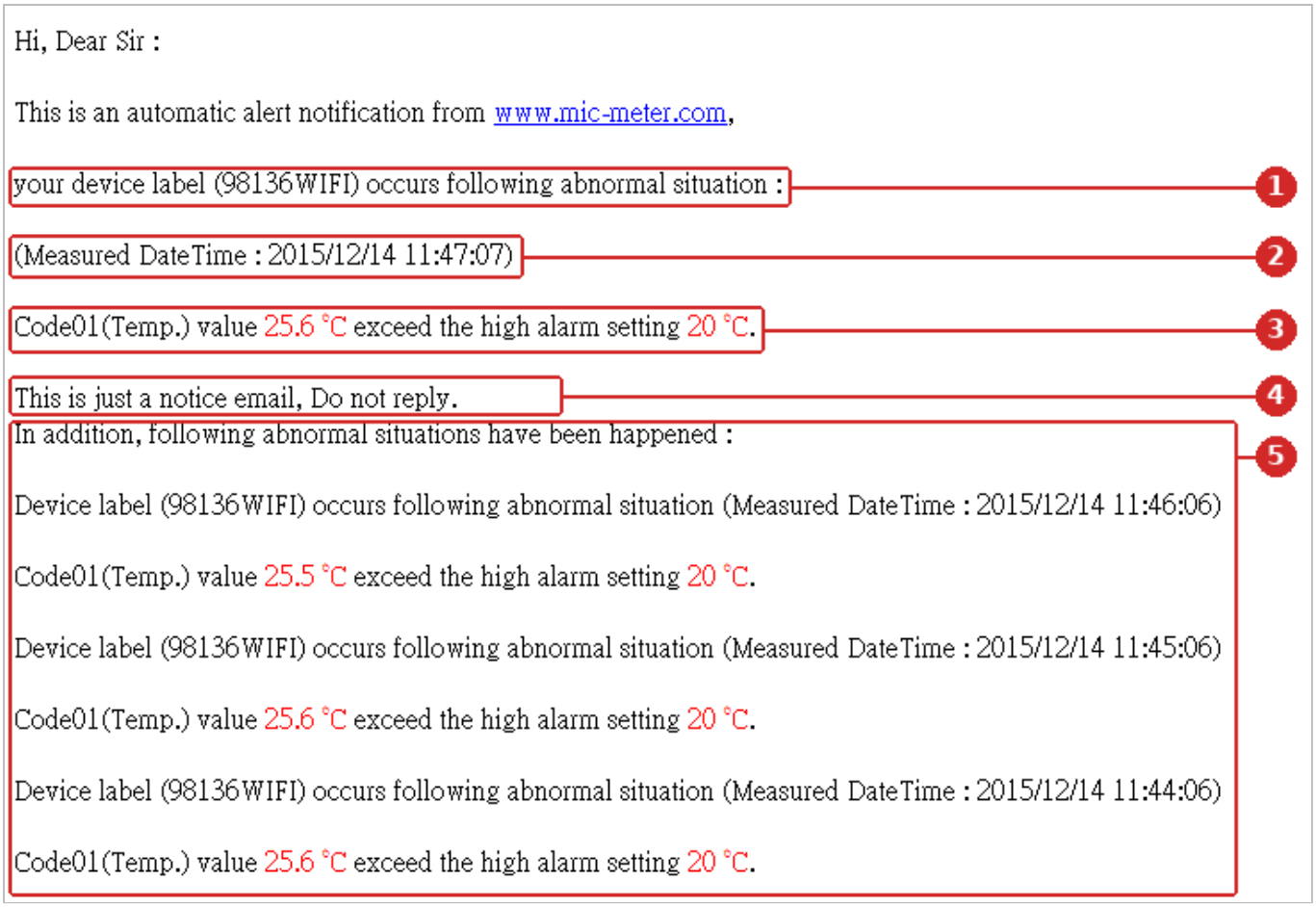
The soil meter uploads data only when you tap **Upload** in the Bluetooth APP, so there are normally long gaps between uploads. Keep **Disconnect Detection** at **0 – disable**, otherwise you will receive Device Disconnect Alerts between measurements.

Other buttons

Delete All Device Data permanently deletes all cloud data of the selected device – export the data first (P22).
Adjustment Coefficient & Value Guide shows the coefficient settings; change them only on advice from MIC.

Alarm E-mail Notification

When an uploaded reading is above the **High Alarm** or below the **Low Alarm** (P19) and **Email Interval** is not 0 (P18), the cloud sends an automatic alert e-mail from **www.mic-meter.com** to the address in A01 User Maintenance (P17).



Example of an alarm e-mail

No.	Part	Meaning
1	**Device label**	Which device has the problem – the name set in Device Control → Device Label (e.g. Chaoyang01).
2	**Measured DateTime**	Date and time of the reading that triggered the alarm.
3	**Sensor, value and alarm**	The sensor, the measured value (red) and the alarm setting it passed (red), e.g. “exceed the high alarm setting”.
4	**Notice only**	Automatic e-mail – do not reply to it.
5	**Other abnormal readings**	Earlier out-of-range readings since the last e-mail, newest first, each with its device label and measured time.

The example comes from a temperature meter (Code01 = Temp.). For the soil meter the e-mail shows the soil sensor, e.g. pH(SOIL), EC(SOIL), W.C.(S.SOIL), N, P or K, with its unit.

How often is it sent?

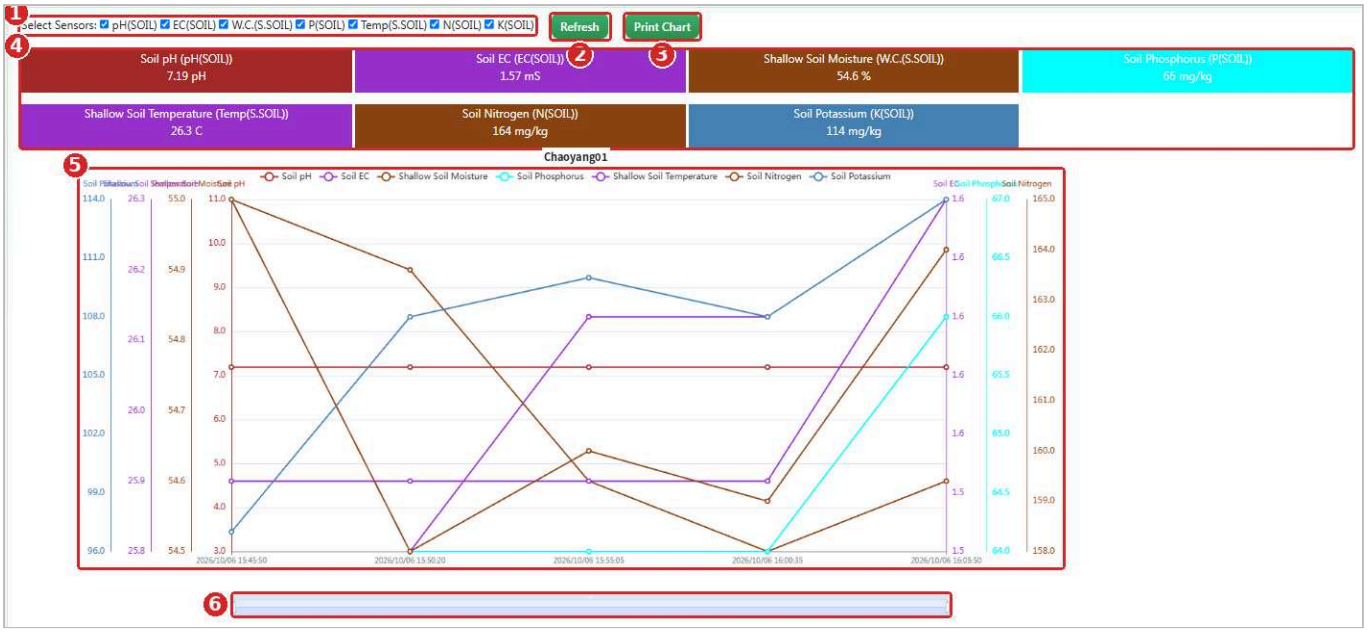
- While the reading stays out of range, a new e-mail is sent at every **Email Interval**.
- To stop the e-mails: Device Control → Email Interval → **0 – disable** → Save, or correct the alarm values.

No alarm e-mail received?

- Check the junk / spam folder, and add www.mic-meter.com to your safe senders.
- Check the e-mail address in A01 User Maintenance (P17).
- Check that Email Interval is not 0 and that the High / Low Alarm values are not both 0.
- The soil meter only sends data when you tap **Upload** in the Bluetooth APP – no upload, no alarm.

Curve Data

Select a device in the list, choose the **Select Period** (Today, 3 months …) or a **Numeric Data Query** start / end date, then click Curve Data.



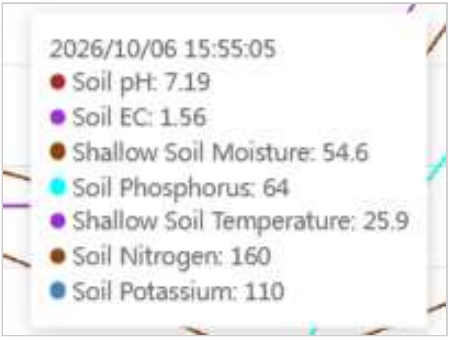
Curve Data page

No.	Item	Description
1	**Select Sensors**	Tick the parameters to show in the chart: pH, EC, W.C. (moisture), P, Temp, N, K. Untick a sensor to hide its curve.
2	**Refresh**	Redraw the chart after changing the sensors or the period.
3	**Print Chart**	Print the chart or save it as PDF.
4	**Latest values**	Coloured tiles with the latest reading of each sensor; the tile colour matches the curve colour.
5	**Chart**	All selected parameters are drawn in one chart titled with the device label. Each parameter has its own axis (left and right) in its colour.
6	**Zoom bar**	Drag the ends of the bar below the chart to zoom into a time range; drag the bar to move along the time axis.

Read a value on the curve

Move the mouse over the chart. A vertical line follows the mouse and a box shows the **date and time** and the value of every selected sensor at that point. The axis labels show the value at the mouse position.

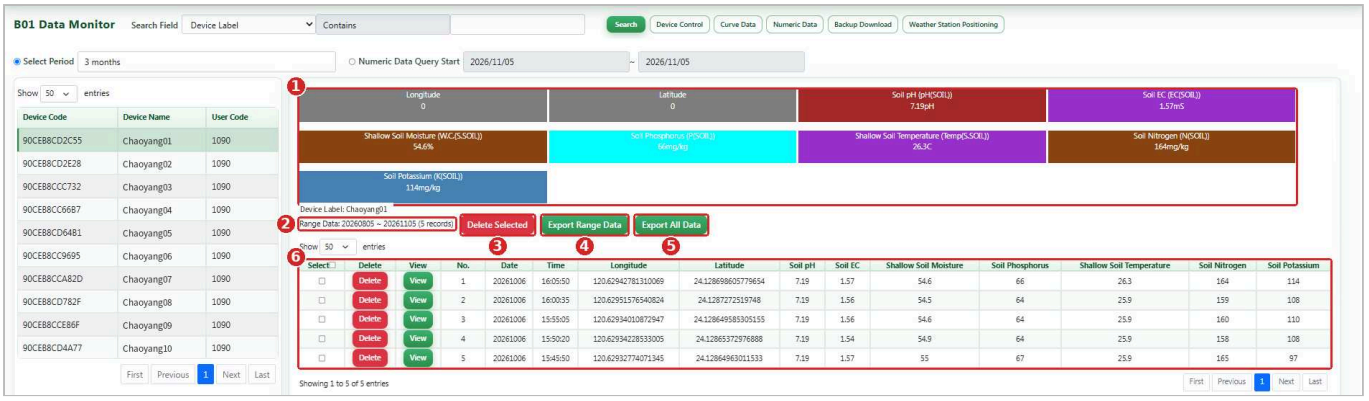
Each point is one upload from the Bluetooth APP.



Values at the mouse position

Numeric Data & Export to Excel

Select a device and the period, then click **Numeric Data** to open the data table.



Numeric Data page

No.	Item	Description
1	**Latest values**	Longitude, latitude and the latest reading of each sensor.
2	**Range Data**	Date range of the table and the number of records (e.g. 20260805 ~ 20261105, 5 records).
3	**Delete Selected**	Delete the records ticked in the **Select** column. **Deleted data cannot be recovered.**
4	**Export Range Data**	Download the records of the selected period as an Excel file.
5	**Export All Data**	Download all records of the device as an Excel file.
6	**Data table**	One row per upload: No., Date, Time, Longitude, Latitude and all readings. **View** opens the record; **Delete** deletes that row.

Export to Excel

1. Set the period, then click **Export Range Data** – or **Export All Data** for everything.
2. The file is saved to the browser's Downloads folder. If it is a compressed (Zip) file, unzip it first.
3. Open the file in Excel: each row is one record with the same columns as the data table.

Date	Time	Longitude	Latitude	pH	EC	Moisture	P	Temp.	N	K
20261006	16:05:50	120.629428	24.128699	7.19	1.57	54.6	66	26.3	164	114
20261006	16:00:35	120.629516	24.128727	7.19	1.56	54.5	64	25.9	159	108
20261006	15:55:05	120.629340	24.128650	7.19	1.56	54.6	64	25.9	160	110

Example of exported data (from the table above)

Note

Excel shows the data from the beginning of the period to the moment you click Export. Download your data regularly to keep a copy. **Logout:** click **Logout** at the top right of the page.

Phone Web Dashboard (Mobile Cloud)

The MIC Cloud can be opened directly in the web browser of your smartphone (Chrome, Safari, etc.). No app installation is needed – useful for checking readings in the field.

1. Log in

- Scan the QR code or open: **https://www.mic-meter.com/Micc/Home/Login?ui=d**
- Select the language at the top right.
- Enter the same User ID and Password as on the computer, tick **Remember account** if required, then tap **Sign in**.

Mobile Cloud

2. B01 Data Monitor

After logging in, every device on the account is listed as a card. Each card shows:

- Device ID (MAC) and the device label (location name).
- The latest readings, and the upload date and time of the latest reading.
- Buttons: **Edit sensors**, **Numeric data** and **Curve data**.

3. Numeric data

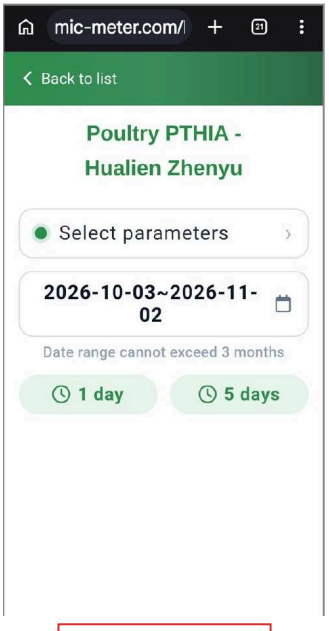
- Tap **Numeric data**, then **Select parameters** to choose the parameters to show.
- Tap the date field to choose the start and end date (max. 3 months), or tap **1 day / 5 days**.
- The table lists the readings, newest first. Swipe left to see the other parameters.



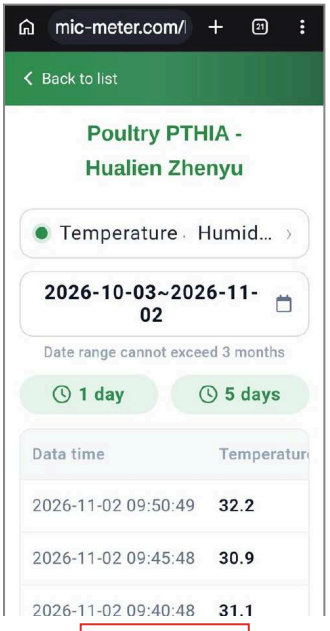
Login



B01 Data Monitor



Parameters / date



Numeric data

Screenshots show an example account; your soil meter card shows pH, EC, moisture, temperature, N, P and K.

Phone Web Dashboard – continued

4. Curve data

- Tap **Curve data** on the device card. Choose the parameters and the date range as for Numeric data (max. 3 months, or 1 day / 5 days).
- The selected parameters are drawn in one chart with a colour legend; the left and right axes show the scales.

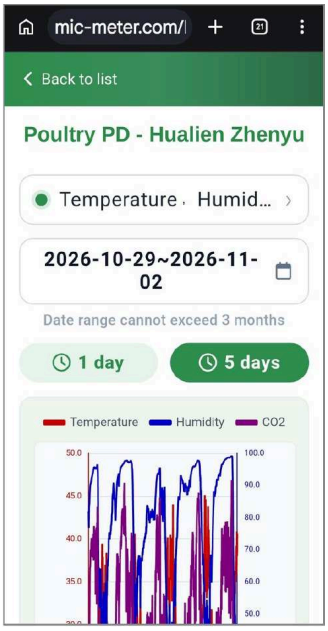
5. Edit sensors (alarm settings on the phone)

Setting	What it does
Stop sending recorded data	Switch on to stop sending this device's recorded data.
Alarm app notification	Switch on to send this device's alarms to the Alarm App (P25–P26).
Disconnect Detection	Select **0 – disable** for the soil meter (it uploads only when you tap Upload).
Alarm (all time periods)	Enter the **Upper** and **Lower** alarm value of each parameter.
Save	Tap **Save** to save the settings.

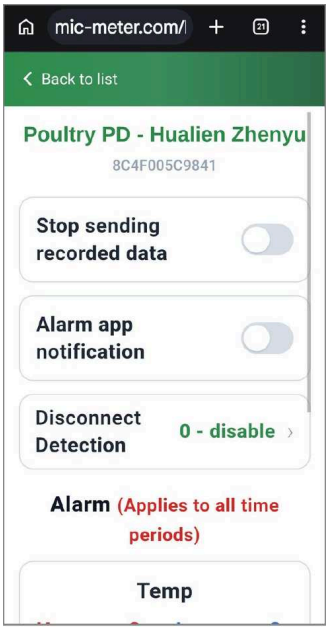
The e-mail interval and the user e-mail address are set on the computer (P17–P18).

6. Menu, language and logout

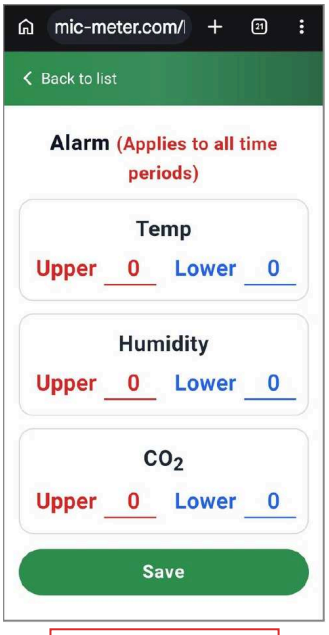
- Tap the ☰ menu at the top left of B01 Data Monitor: it shows the account name and software version.
- Under **ACCOUNT & LANGUAGE**, select the language or tap **Logout**. Tap **< Back to list** to return to the device list.



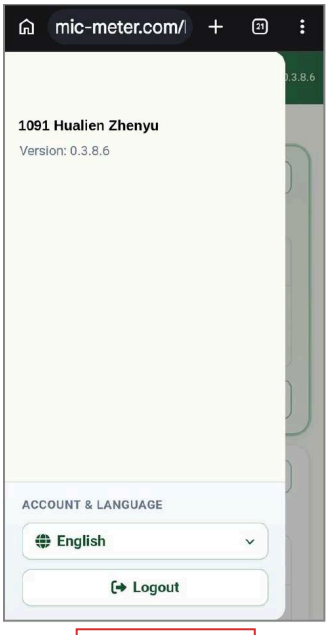
Curve data



Edit sensors



Alarm values / Save



Menu / Logout

Computer or phone? Use the computer for full settings, A01 user data, e-mail alarms and Excel export; use the phone for quick checks and alarm values in the field.

Alarm App

The Alarm App (Yi Hsing Sensing and Monitoring System) receives alarm and disconnect notifications from your devices and lets you check device data on your phone.

1. Free download

Search “Yi Hsing” in Google Play or the App Store, or scan the QR code below:

Android – Google Play

iPhone – App Store

2. Log in

- Open the app and select the language at the top right.
- Enter the same **User ID** and **Password** used for the MIC Cloud. Tap the eye icon to show or hide the password.
- Tick **Remember account** if required, then tap **Login →**.

3. Main Menu

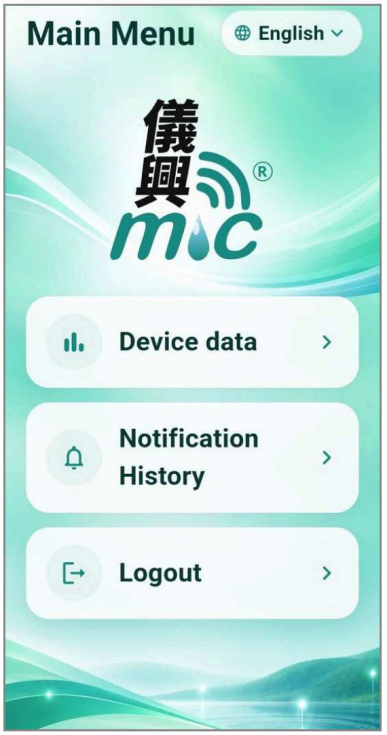
- **Device data**: list of your devices and their data.
- **Notification History**: alarm and disconnect notifications received.
- **Logout**: log out of the app. The language can be changed at any time at the top right.

Note – Turn on notifications

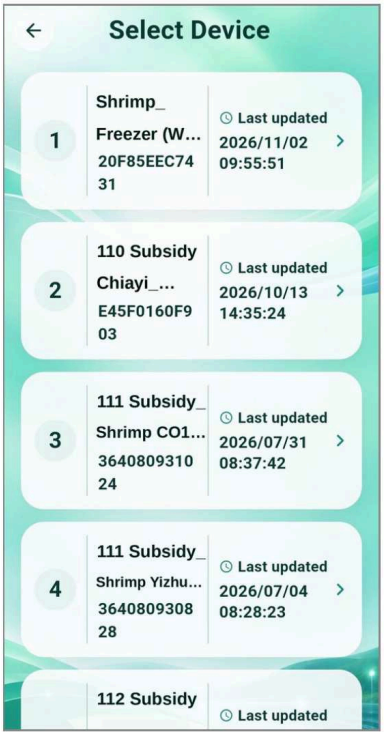
Allow notifications for the app in your phone settings, and set **Alarm app notification → On** for the device in the MIC Cloud → Device Control (P18).



Login



Main Menu



Select Device

Alarm App – continued

4. Device data

- Tap **Device data** to open **Select Device**. Each device shows its number, device label, device ID and **Last updated** date and time.
- Tap a device to view its data. Tap ← to return to the Main Menu.

5. Notification History

Notification	Meaning	What to do
Device Anomaly Alert	A reading is above the High Alarm or below the Low Alarm. Shows the detection time and the anomaly items.	Check the measuring point; adjust the alarm values if needed (P19).
Device Disconnect Alert	No data received within the Disconnect Detection time. Shows the detection time and how long the device has been offline.	For the soil meter, set Disconnect Detection to **0 – disable** (P18).

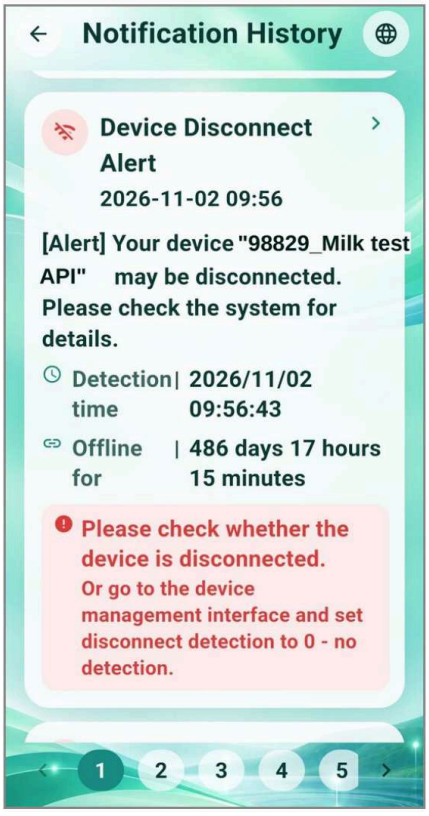
- Tap a notification to view the details. Use the page numbers at the bottom for older notifications.
- Tap the globe icon at the top right to change the language.

6. Logout

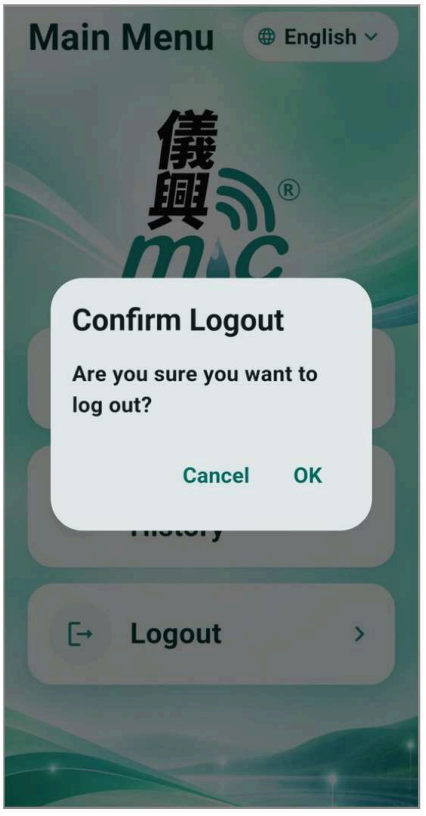
- Tap **Logout** in the Main Menu, then **OK** to confirm (or **Cancel** to stay logged in).



Notification History



Disconnect Alert detail



Confirm Logout

Alarm flow: Bluetooth APP uploads a reading → MIC Cloud compares it with the High / Low Alarm → if out of range, an e-mail (Email Interval) and/or a phone notification (Alarm app notification) is sent.

Troubleshooting & Error Code

Troubleshooting:

Problem	Cause	Solution
Meter & probe		
Readings show 0.00	Probe not installed correctly.	Reinstall the probe before turning on the meter (see Error Code below).
Readings do not change	HOLD pressed (H icon shown).	Press HOLD again to release.
Erratic readings	Weak or mixed batteries; poor soil contact; dry soil.	Use fresh batteries or the adaptor; compact the soil; soil moisture must be above 20 %.
Large deviation after changing probe	Wrong calibration values.	Enter the spare probe values (P8), or reset to 0.
Meter turns off by itself	Auto power-off after 15 minutes.	Press HOLD + PWR to disable auto power-off.
SD card		
SD icon flashes several times	Low battery or damaged card.	Use the adaptor; format the card as FAT32 (P9).
bAt shown, no recording	Voltage below 6.4 V.	Replace the batteries or plug in the adaptor.
Wrong date / time in CSV	Clock not set.	Set the datalogger clock (P10).
Bluetooth APP & Cloud		
Meter not found in the APP	Bluetooth, GPS or permissions off.	Allow location and camera permissions; turn on Bluetooth and GPS (P12).
iPhone cannot connect	MAC code not entered.	Enter the 12-digit MAC from the silver label (Step 8–9).
No new data in the cloud	Upload not tapped; Register Date blank.	Tap Upload for every record; check Register Date in Device Control (P18).
Too many alarm e-mails	Value keeps exceeding the alarm.	Email Interval → 0 – disable, or change the alarm values (P19).
Disconnect alerts between measurements	Disconnect Detection is on.	Set Disconnect Detection to 0 – disable (P18).
No notification on the phone	Notifications off.	Allow app notifications; Alarm app notification → On (P25).

Error Code:

Code	Description
0.00	The sensing needle is not installed correctly (e.g. two 3-pin or two 5-pin needles inserted). Reinstall it before turning on the meter.

Still not solved? Contact MIC or your distributor with the meter model, the MAC code (silver label), a **photo of the display** and a description of the problem.

Maintenance, Warranty & Contact

Maintenance:

When	Check
Each use	Clean and dry the needles with the brush and a paper towel; check the connector PINs are straight.
Monthly	Export the cloud data to Excel; copy the SD card data to a PC; check battery level.
Storage	Remove the batteries; store the meter and probes in the case in a dry place at 0 ~ 60 ℃.
After probe change	Enter the correct calibration values (P8).

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, or operation outside of specification. During the warranty period the manufacturer reserves the right to decide either to repair or replace the product. The meters are to be returned 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 sensing probe: warranty is half a year (under proper storage and usage only).
- Claims for improper use (including adaptation to particular applications not foreseen in this manual) or improper combination with incompatible accessories or equipment, or previous repair attempts by unskilled or unauthorized personnel.
- Sensor damaged by the user's improper use (watering, burning, condensation…).

Contact

Company	MIC Meter Industrial Co., Ltd.
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Cloud	https://www.mic-meter.com/Micc/Home/Login