

# Multifunctional Soil Survey Instrument with Wireless transmission

**Model: ND4009**

## **USER'S MANUAL**



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## INTRODUCTION

ND4009 multifunctional wireless transmission Soil Survey Instrument is a new type of real-time plant monitoring instrument, it comes with a high-performance measuring probe, can measure soil moisture, PH , salinity (salt content), temperature, and measure the intensity of light in the plant environment, and has the function of acoustic wave to assist plant growth. This product adopts the detection and display separate mode design, through wireless data transmission, and a display host can be connected to a maximum of 5 probe rods, greatly reducing the user because of different use scenarios and frequent measurement workload, improve the measurement convenience.

The tool is designed with unique patented technology and is equipped with a large LCD user interface with backlight to visually display various measurement results for easy reading. It has the characteristics of reliable performance, small size, easy operation, fast and accurate measurement, so that you can timely grasp the growing environment of plants, and take effective maintenance measures in time, which can effectively save your time and energy, and is your right-hand assistant in terms of grass and grass cultivation, soil testing, landscaping and so on.

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## PRODUCT OVERVIEW

### Host Part:

- A. Status indicator LED light
- B. Backlit LCD
- C. Hold Button
- D. Wireless Channel Setting Button
- E. Unit switch Function Button
- F. POWER Button

### Probe Part:

- G. Light Detection Window
- H. Status indicator LED light
- I. The probe rod measures the electrode
- J. Probe button
- K. Battery Cover
- L. Sound hole



## LCD SCREEN OVERVIEW

- A. Display Lock Icon
- B. Soil PH Value
- C. Soil Moisture Value
- D. Ambient Light Intensity Value
- E. Wireless Communication Channel
- F. Soil Temperature Value
- G. Soil Salinity Value
- H. Battery indicator



## OPERATING INSTRUCTIONS

### INSTALL BATTERIES AND START

Install two AAA alkaline batteries in the battery compartment of the display host, cover the battery cover, press the power button to turn on; Long press the power button for about 2S to shut down; Install one AAA alkaline battery into the probe rod battery compartment, cover the battery cover, press the probe rod button for about 1s, the machine buzzes and the indicator flashes once, indicating that the machine has been started successfully; Then press the probe button for about 1s, the machine buzzes 2 times, and the indicator flashes 2 times, indicating that the machine is successfully shut down.


### SET THE UNIT

Short press the power button to switch the °C/°F

## **HOLD FUNCTION**


Press the hold button  can hold/release the current display value of the display.

## **Communication channel selection**

Short press the display button , you can select the communication channel, find the probe rod data under the channel.

## **Probe rod display pairing**

1. Make sure that the probe rod is turned off (if it is turned on, press the probe rod button for about 1s and buzz twice to shut it off), and press the probe rod button until you hear 4 buzzes; When the LED light turns on, it indicates that the probe rod has entered the pairing state and the pairing time is 20 seconds. If there is no pairing within 20 seconds or the pairing is successful, the probe rod will return to the normal working state.

2, select the communication channel that needs to be paired on the display, and then long press  until you hear 2 buzzes, if the pairing is successful, the LED light of the probe rod flashes twice, and sends data once to the display, at this time the display will display the received data.

## **Auxiliary plant growth function**

When the probe rod is turned on, long press the probe rod key until the buzzer sounds, indicating that the buzzer nursery function is turned on.

## **Sound rod use precautions**

Because the probe rod is in the soil for a long time, the probe pole sheet is prone to oxidation, which has a great impact on the detection of soil PH and salinity. In order to ensure the accuracy of measurement, the probe pole sheet should be treated with fine sandpaper regularly to remove the surface oxidation layer.

When the probe rod is not used for a long time, it needs to be shut down to enter the power saving state.

## **Precautions for wireless reception use**

The host acceptance area is mainly concentrated in the semi-circle range of the front side of the probe rod, so when used, the front side of the probe rod needs to face

The area where the host resides; When the distance between the host and the probe rod exceeds 30 meters, the signal reception will have a certain directionality, and when the signal is not good, the direction of the host needs to be adjusted to obtain data.

## **Battery indicator**

If the indicator is empty, it indicates that the battery inside the monitor is out of power and needs to be replaced with a new battery.

When the display communication channel number flashes, it indicates that the current communication rod battery has been out of power, to ensure normal operation, replace the internal battery of the probe rod

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## BATTERY SAFETY TIPS

- Remove the battery when cleaning this product.
- Please remove the battery when the product will not be used for a long time.
- Please install the battery correctly according to the positive and negative poles of the battery.
- Please dispose of used batteries properly: placing the batteries in a high temperature environment will cause an explosion hazard, please do not throw the batteries into fire. Wrap the battery terminals with insulating tape to prevent them from coming into direct contact with other objects. Many countries have regulations on battery disposal. Please follow the relevant local regulations.

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## CAUTION

This device complies with Part 15 of the FCC. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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## TROUBLESHOOTING

Fault phenomenon	Possible reason	Method of exclusion
No display	Possible battery drain	Check or replace the battery
Display battery is empty	Low battery	Replace with new battery
The Host cannot receive data	The distance between the probe rod and the display host is too far	Move the host closer
	There are too many obstacles between the rod and the display host	Move the display to a relatively empty location
	The probe battery is low	Replace the rod battery

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## SPECIFICATIONS

Name	Multifunctional Soil Survey Instrument with Wireless transmission
Model	ND4009
Illumination	Range: 0~80000lux, Resolution: 1
	Accuracy: $\pm 4\%$
Soil moisture	Range: 0~30%, Resolution: 1
	Accuracy: $\pm 3\%$
Soil salinity	Range: 0~1.5%, Resolution: 0.1
Soil temperature	Range: $-9.9 \sim +50^{\circ}\text{C}$ ( $14.1^{\circ}\text{F} \sim 122^{\circ}\text{F}$ ), Resolution: 0.1
	Accuracy: $\pm 1^{\circ}\text{C} / \pm 1.8^{\circ}\text{F}$
Soil PH	Range: 3.0~10.0, Resolution: 0.1
Sound wave	Frequency: 4KHZ
Power	Display Host: AAA*2 Alkalinity
	Probe: AAA*1 Alkalinity
Continuous working time	Probe: >30days (AAA Alkalinity battery)
Communication distance	30m
Communication frequency	434MHz
Transmitting power	MAX:10mW
Product dimension	Display Host: $112 \times 65 \times 20.5\text{mm}$
	Probe: $224 \times 30 \times 20\text{mm}$
Product weight	Display Host: 100g (w/o battery)
	Probe: 45g (w/o battery)
Operating ambient temperature	Display Host: $0 \sim 40^{\circ}\text{C}$
	Probe: $-10^{\circ}\text{C} \sim +50^{\circ}\text{C}$
Working environment humidity	<90%RH No condensation
Storage environment	$-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$ , $\leq 85\%$ (Without battery)

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## WARRANTY

The product is warranted to be free from defects in materials and workmanship for a period of one year from the date of purchase.

### Notice:

**The warranty does not apply to the following conditions:**

- Disassembling the laser tool will void the warranty.
- We are not responsible for any damage resulting from abrasion, water, dropping or disassembling.

**Tip:** Most of the components of this product can be recycled. If you do dispose of this product, do so according to local laws rather than throwing it in the bin.

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