

4 en 1 Soil Survey Instrument

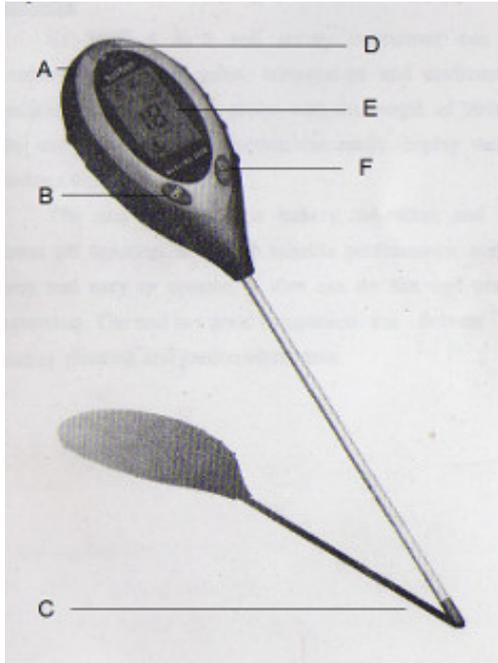
Operation Manual SR-300B

Overview

The 4 in 1 soil survey instrument can test moisture of soil, pH value, temperature and environment sunlight intensity using a probe with the length of 200mm. The unit with backlight function can easily display various readings with the oversize LCD.

The unit also has low battery indication and auto power off function. It is with reliable performance, easy to carry and easy to operate. It also can do fast and precise measuring. The unit is a good companion for flowers and grasses planting and garden virescence.

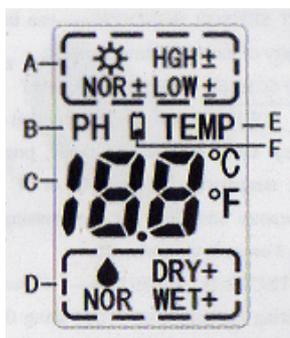
Tool Components



- A) **PH/TEMP KEY** --- mode switch: Set the mode for pH Value, temperature or moisture
- B) **ON KEY** --- press the key to start the unit.
- C) **TEST PROBE** ---can test pH value, moisture and temperature.
- D) **LIGHT SENSOR WINDOW** --- can induct sunlight intensity of measured environment.
- E) **LCD SCREEN WITH BACKLIGHT**
- F) **°C/°F OFF KEY** --- temperature unit switch/power OFF key: under temperature mode, press the key to select temperature unit is °C or °F (the default temperature unit is °C). Keep pressing the key for about 3 seconds to power off.
- G) **PROTECTION BUSHING** --- Please take the protecting bushing away when using the test probe. Put on the protecting bushing when it is not in use to protect the test probe (accessory).

Illustration of the display screen

- A) Sunlight intensity display area ----- 9 levels: LOW-, LOW, LOW+, NOR-, NOR, NOR+, HGH-, HGH, HGH+, each increasing in amount and quality. LOW- means an extremely dim environment. HGH+ means an extremely bright environment.
- B) pH function display



- C) pH or temperature value display ----- It shows 3,5 to 9,0 for pH value and -9°C to +50°C (16°F to 122°F) for temperature. When showing "Lo" or "HH", it means the value is beyond the measurable range.
- D) Moisture display area ----- 5 levels: DRY+, DRY, NOR, WET, WET+, each increasing in wetness. WET+ means an extremely wet environment while DRY+ means an extremely dry environment.
- E) Temperature function display.
- F) aLow battery display ----- The symbol will display on the LCD continuously when the battery is low.

How to use

Please install one 9 V battery before use

Battery installation

Open the battery compartment door on the back of the tool and plug one 9 volt block battery onto the battery connector. Put the battery back to the compartment and close the door.

Operation Guide

1. Operation for sunlight measurement

- a) Press the ON button to start the unit
- b) Point the light sensor window toward max light source
- c) The current light intensity will be shown on the LCD
Tips: please do not obstruct or cast a shadow over the light sensor

2. Operation for pH value

- a) Switch the pH/TEMP button on the back of the unit to pH function
- b) Push the probe down as vertically as possible into the soil which needed to be tested. Do not push the probe too near the stem to avoid damage to the plant roots.
- c) Press ON button to start the unit.
- d) pH value of the tested soil will be displayed on the LCD.
- e) Take several readings to confirm your findings.

Tips:

- 1 - Insert the probe straight up and down, about halfway between the plant stem and the edge of the pot. For pots over 30cm in diameter, position the probe about a third of the way between the stem and the edge of the pot. For a deep pot, insert the probe more deeply aiming for where the heaviest root concentration is likely to be.
- 2 - Please softly push the probe into the soil to avoid damage to the probe.
- 3 - If the tested soil is extremely dry or too fertile and can't be tested the pH value, the user should sprinkle some water into the soil. Test again after half an hour.

3. Moisture measurement

- a) Switch the pH/TEMP button on the back of the unit to TEMP position.
- b) Push the probe down as vertically as possible into the soil which needed to be tested. Do not push the probe too near the stem to avoid damage to the plant roots.
- c) Press ON button to start the unit.
- d) Moisture of the tested soil will be displayed on the LCD
- e) Take several readings to confirm your findings.

Tips :

- 1-Insert the probe straight up and down, about halfway between the plant stem and the edge of the pot. For pots over 30cm in diameter, position the probe about a third of the way between the stem and the edge of the pot. For a deep pot, insert the probe more deeply aiming for where the heaviest root concentration is likely to be.
- 2- Please softly push the probe into the soil to avoid damage to the probe.

4. Temperature of the soil measurement

- a) While testing moisture, the temperature of the soil will be displayed on the LCD at the same time.
- b) Press °C/°F OFF button to set the unit temperature to °C or °F
Tips: If the user doesn't push the probe into the soil, the current environment temperature will be displayed on the LCD.

Interpret environment sunlight intensity reading

Appropriate light does well in plant's growth (some plants need more light than others). The unit has graduated the environment light and displays according to intensity, which can offer reference for your plant's growth.

Here is the list:

=====> Increase in amount and quality of light								
LOW-	LOW	LOW+	NOR-	NOR	NOR+	HIGH-	HIGH	HIGH+
very	low	much	slightly	normal	slightly	much	high	very

Interpretation of pH values of the soil

Extremely acid or alkaline is an important factor for restricting plant's growth and feature. Most plants can't grow in soil which is extremely acid or alkaline. By testing your soil, the user can choose plants with the correct pH or adjust pH more accurately, effectively and economically.

pH = 7 : indicates a neutral soil
 pH < 7 : acidic soil
 pH > 7 : alkaline soil

Here is the list of pH values of the soil compared with acidity and alkalinity:

Out of range <===== >===== Out of range													
Increase in acidity								Neutral	Increase in alkalinity				
Lo	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	HH

Look up the pH reference list. If the pH reading is lower than the pH range for your plant, then you can add lime to increase pH. If the pH reading is higher than the pH reference range for your plant, then you can add chemicals or organic to reduce pH.

Tips: Raising or lowering pH is not an exact science and most plants have a reasonably wide pH tolerance. A majority of plants can survive on a pH of 6.5, some need a particularly acid or alkaline soil.

Soil moisture

Appropriate moisture does well in plant's growth. The unit has graduated the display in 5 level, which can offer reference for your plant's growth.

Here is the list:

===== > Increase in wetness				
DRY+	DRY	NOR	WET	WET+
very dry	dry	normal	wet	very wet

If the reading is lower than that shown in the table, it's time to water your plants. If the reading is higher than that shown in the table, you do not need to water the plants. Check small pots more often than large ones - they dry out more quickly. Over watering rots the roots, so do not water too frequently. Out of season, most plants only need water once a week.

Operation tips

- The unit will be automatically off after 5 minutes disabling for electricity.
- The unit only can be used in soil, please don't place the probe into water or other solutions.
- Don't leave the probe in the soil longer than necessary to avoid the possibility of damage to the probe.
- Don't bend the probe.
- Don't use the probe to break the soil.
- Don't put the probe near metal objects and be sure to keep the probe away from metal objects.
- Wipe the probe clean and dry before taking another test reading and after use.
- Before testing, please lightly shine 10-12cm of the probe and any oxides that may have formed on the surface of the metal.
- Insure that the probe is wiped clean and the protecting bushing is put on the test probe before storing in order to avoid oxidation of the probe.
- When the unit is withdrawn from the soil, remember not to grasp the probe.

Troubleshooting

- Low battery: battery "icon" will be displayed on the LCD, please replace the battery.
- Out of range, the pH value of the unit is 3.5 to 9.0 and for the temperature -9°C to +50°C.
- Stones, organic matter had touched the probe, please wipe again and test in another place.
- Probe is too close to the side and/or the bottom of the pot.
- Haven't cleaned the probe before measuring.
- Sample area is too dry.
- The soil around the probe isn't even.
- Soil or potting soil is tested too soon after re-potting.
- There is houseplant fertilizer or tablet stick near the probe.
- Damaged probe

Cautions

- Handle with care and do not let the unit drop down.
- Do not disassemble the unit to avoid failure.
- Don't place the unit in a toolbox.
- Avoid dust and water, which may stain the unit.
- Do not store the unit above 50°C.
- Clean the unit with soft fabric.
- Remove the battery when not in use for an extended period of time.

Technical specifications

Name	4 in 1 Soil Survey Instrument	
Type	KC-300B , SR-300B	
Test objects	Sunlight, Moisture, pH-value, Temperature	
test range	sunlight (9 levels)	LOW-, LOW, LOW+ NOR-, NOR, NOR+ HIGH-, HIGH, HIGH+
	moisture (5 levels)	DRY+, DRY, NOR, WET, WET+
	pH value (12 levels)	3.5 ~ 9.0 (display resolution 0.5)
	temperature	-9°C ~ +50°C (16°F ~ 122°F) (display resolution 1°C/1°F)
Power supply	One 9V block battery	
Automatic off	The tool will be off automatically if there is no action within 4.5 minutes	
Backlight function	It will be off automatically within 1.5 minutes	
Operating temperature	+5°C ~ +40°C	
Size	Main unit	122mm x 63mm x 36mm
	Test probe	ø 5mm x 200mm
Weight	About 73g (battery not included)	

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.

