TRANS INSTRUMENTS

INSTRUMENTS FOR THE PROFESSIONAL

HORTICARE PH OPERATION (MANUAL)

PRODUCT SPECIFICATION

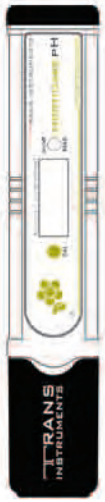
OPERATING RANGE	0~14PH
RESOLUTION	0.1PH
ACCURACY	±0.2PH
BATTERY	4X1.5V BUTTON CELL (ALKALINE LR44 OR EQUIV.)
BATTERY LIFE	APPROX. 150 HOURS (CONTINUOUS USE)
AUTO SHUT-OFF	APPROX. 15 MIN.
OPERATING TEMPERATURE	0°~50°C

The function of a nutrient solution or fertilizer mixture is to supply the plant roots with water, oxygen and essential mineral elements in soluble form.

The pH of nutrient solution decides the availability and absorption of nutrients by each species of plant.

Every plant species has a preferred pH range in which it will grow best. Wrong pH nutrient solution results in retardation of growth and even death of the plant.

Trans Instruments HortiCare pH check tester is specially designed with advance features to ensure fast and accurate pH test, for the commercial as well as home growers.



TRANS INSTRUMENTS
www.transinstruments.com
ISO 9001 Certified Firm

Water resistant - floats on water - drop shock - simple to use

TRANS INSTRUMENTS

Horticare pH (Hydroponics)

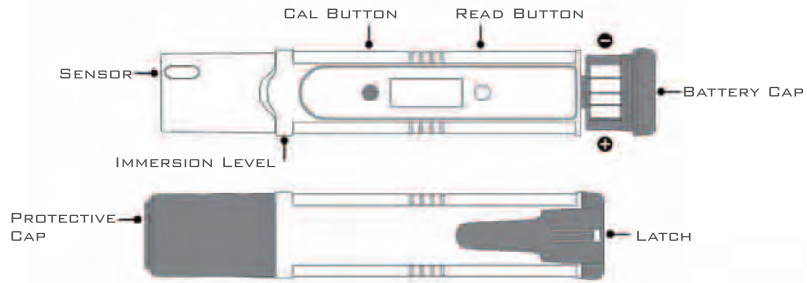
for maximum & consistent harvest . lush greens . lasting blooms

0.1 pH resolution - Auto End-point - One-Touch calibration

ISO 9001 Certified Firm

Water resistant - floats on water - drop shock - simple to use

PRODUCT FEATURE



BATTERY CAP INSTALLATION

INSTALLING BATTERY CAP

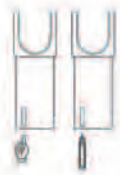
This unit is shipped with the battery cap open. Close the battery cap by pressing Cap on on a hard surface until the latch **clicks**, indicating a secure lock.

REPLACING BATTERIES

1. Lift latch with a pen or mini screwdriver. **DO NOT PULL** latch out completely.
2. Use the thumb to push Cap forward.
3. Hold the battery cap and seperate it from the meter.
4. Replace all batteries according to polarity.

PRECAUTIONS IN HANDLING

Do not touch, rub or scratch the sensor. It is very delicate and might break or loose its sensitivity.

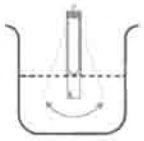


Do not submerge the unit underwater. Though the unit is water resistant, it cannot come under high pressure underwater. If it is dropped into water, retrieve it immediately and wipe dry with a cloth.

Do not store unit without the protective cap or under high temperature and direct sunlight. This will shorten the life span of the meter and cause premature expiry of the sensor.

Do not clean unit with thinner or solvents. This will damage the unit. Use only mild detergent on damp cloth to clean and rinse unit if needed.

MAKING MEASUREMENT



1. Remove protective cap and press READ button once to switch on.
2. Display will appear blinking. Random readings or "- - -" displayed are normal when sensor is not in contact with liquid.
3. Rinse the sensor area with water and shake the tester in the same way you would use a mercury thermometer, every time before each measurement.
4. Dip the sensor into liquid, shake to remove bubbles. Wait for a stable endpoint reading to establish where display will stop with a beep.
5. Press the READ button to make another auto-lock measurement.
6. If the glass sensor is dry, a slow response will result with 2 to 3 digit off on repeated measurement. Dip the sensor area in a cup of water for 30 to 60 minutes before testing again.
7. To switch off the tester, hold-down the READ button for 3 seconds.
8. Always rinse, shake dry sensor and replace with protective cap before storing.

MAKING MEASUREMENT WITHOUT AUTO-LOCK

1. To disable auto-lock measurement, remove the unit from water, press and hold down both the READ button and CAL button until a blinking small 'A' sign on right corner of the display disappear.
2. Make measurement usual.
3. Here you can freeze the display by pressing the READ button once. Pressing a second time will release it. Whenever the display is blinking, it means the unit is continuously measuring.
4. To enable the auto-lock feature again, press and hold down both the READ button and CAL button until the 'A' sign re-appear.

If the unit is stored for a long time and the sensor become dry, a slow response will result. Dip the sensor area in a cup of water or preferably pH7 calibration solution for 30 to 60 minutes before testing again.

Never soak the sensor in water over night as this will cause premature expiry of sensor.

In the presence of certain radio transmitters, this product may produce erroneous readings. If this occurs then measurements should be repeated at another location.

CALIBRATION

NOTE: Regular calibration is necessary to maintain its accuracy. Depending on usage, perform a check once a week if it is used once daily; check or calibrate once a month if it is used once weekly. If multiple uses are required daily, then daily check or calibration before tests will ensure its accuracy.

This tester is factory calibrated. But due to prolong storage, the unit must be re-calibrated before use. Soak the sensor in tap water for 10 minutes prior to calibration..

Calibration should be performed at room temperature of about 25°C or 77°F.

At anytime, pressing the READ button a few times will cancel and exit the calibration mode.

1. Use only pH7.0 buffer solution for calibration. The attached satchel is for single use only.

   Standard Buffer Solution : pH 7.00 Order Code : SP0701
2. Remove protective cap. Always rinse sensor area with water, shake tester in the same way you would use a mercury thermometer before each and every test.
3. Cut open the shorter side of the pH7 satchel and slide the sensor area till it is fully immersed. Tap or jiggle a little to remove bubbles.
4. Hold on to the satchel, then press and hold down CAL button until it displays CAL then 7.0 in a blinking mode. Wait for a stabilized end-point reading when the display stops with a beep. Calibration is completed.
5. Rinse the sensor area thoroughly with water before continue testing.

CALIBRATION USING pH4 OR pH10 BUFFER:

1. Make sure you have the correct calibration buffer solution and dip the sensor into it.
2. Press and hold the CAL button until CAL appear, then 7.0 displayed. Within 3 seconds press the CAL button once to switch to 4.0 standard, pressing a second time will show 10.0 and the third time back to 7.0 in a cyclical sequence. Display must match the standard solution you are about to calibrate.
3. Wait for a stabilized endpoint reading when display stops with a beep. Calibration completed.

GUIDE TO HYDROPONICSCONTROL
(REFERENCE OF VARIOUS CROPS)

Flowers	pH	EC	cF	PPM
African Violets	6.0-7.0	1.2-1.5	12-15	840-1050
Anthurium	5.0-6.0	1.6-2.0	16-20	1120-1400
Antirrhinim	6.5	1.6-2.0	16-20	1120-1400
Aphelandra	5.0-6.0	1.8-2.4	18-24	1260-1680
Aster	6.0-6.5	1.8-2.4	18-24	1260-1680
Begonia	6.5	1.4-1.8	14-18	980-1260
Bromeliads	5.0-7.5	0.8-1.2	8-12	560-840
Caladium	6.0-7.5	1.6-2.0	16-20	1120-1400
Canna	6	1.8-2.4	18-24	1260-1680
Carnation	6	2.0-3.5	20-35	1260-2450
Chrysanthemum	6.0-6.2	1.8-2.5	18-25	1400-1750
Cymbidiums	5.5	0.6-1.0	6-10	420-560
Dahlia	6.0-7.0	1.5-2.0	15-20	1050-1400
Dieffenbachia	5	1.8-2.4	18-24	1400-1680
Dracaena	5.0-6.0	1.8-2.4	18-24	1400-1680
Ficus	5.5-6.0	1.6-2.4	16-24	1120-1680
Freesia	6.5	1.0-2.0	10-20	700-1400
Impatiens	5.5-6.5	1.8-2.0	18-20	1260-1400
Gerbera	5.0-6.5	2.0-2.5	20-25	1400-1750
Gladiolus	5.5-6.5	2.0-2.4	20-24	1400-1680
Monstera	5.0-6.0	1.8-2.4	18-24	1400-1680
Roses	5.5-6.0	1.5-2.5	15-25	1050-1750
Stock	6.0-7.0	1.6-2.0	16-20	1120-1400

Vegetable	pH	EC	cF	PPM
Asparagus	6.0-6.8	1.4-1.8	14-18	980-1260
Bean (Common)	6	2.0-4.0	20-40	1400-2800
Beetroot	6.0-6.5	0.8-5.0	8-50	560-3500
Broad Bean	6.0-6.5	1.8-2.2	18-22	1260-1540
Broccoli	6.0-6.8	2.8-3.5	28-35	1960-2450
Brussels Sprout	6.5	2.5-3.0	25-30	1750-2100
Cabbage	6.5-7.0	2.5-3.0	25-30	1750-2100
Capsicum	6.0-6.5	1.8-2.2	18-22	1260-1540
Carrots	6.3	1.6-2.0	16-20	1120-1400
Cauliflower	6.5-7.0	0.5-2.0	5-20	1050-1400
Celery	6.5	1.8-2.4	18-24	1260-1680
Cucumber	5.5	1.7-2.5	17-25	1190-1750
Eggplant	6	2.5-3.5	25-35	1750-2450
Garlic	6	1.4-1.8	14-18	980-1260
Lettuce	6.0-7.0	0.8-1.2	8-12	560-840
Onions	6.0-6.7	1.4-1.8	14-18	980-1260
Pak-choi	7	1.5-2.0	15-20	1050-1400
Potatoes	5.0-6.0	2.0-2.5	20-25	1400-1750
Pumpkin	5.5-7.5	1.8-2.4	18-24	1260-1680
Radish	6.0-7.0	1.6-2.2	16-22	840-1540
Spinach	6.0-7.0	1.8-2.3	18-23	1260-1610
SweetPotato	5.5-6.0	2.0-2.5	20-25	1400-1750
Tomatoes	6.0-6.5	2.0-5.0	20-50	1400-3500
Turnip	6.0-6.5	1.8-2.4	18-24	1260-1680

ERROR CODE & MAINTENANCE

- When **Err** appears during measurement or calibration, it means a stable reading cannot be established. This could due to a dry sensor. Try soak the sensor in a cup of water for 1 hour and re-test. When **E7**, **E4** or **E10** appear during calibration, it could mean a wrong standard solution is used. Otherwise, the sensor could be damaged or expired.
- Keep in mind that all pH sensors age with time and usage. Therefore, re-calibration is necessary to maintain accurate reading.
- If the unit is stored for a long period of time, the sensor will become dry. This will result in a slow response to a stable reading. Soaking the sensor area in a cup of tap water or preferably pH7 solution for 30 minutes to 1 hour will restore sensitivity to the sensor.
- When the battery symbol continuously appears on the display, this indicates a low battery and only 2 hours of continuous use remain. Replace all four batteries according to instructions overleaf.
- Note that the pH sensor has a limited life span of about 365 tests or 1 year whichever is earlier. When the unit fails to calibrate or responds very slowly, it means that the unit should be replaced. It is not possible to repair a broken or expired sensor.