

HortiCare

Digital tester

NUTRIENT CONTROL

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 of nutrient solution will result in retardation of growth and even death of the plant.

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

Simple to use advance features:

HOLD FUNCTION

Able to freeze display for ease of reading.

BEEP FUNCTION

Able to beep to signal the begining and end of each function.

ONE-TOUCH CALIBRATION

Effortless calibration with a single touch of the button.

AUTO-LOCK FUNCTION

Intelligent sensing of end reading when enable.

AUTO SHUT OFF

Automatic shut off to conserve battery when unit is idle.

LOW BATTERY INDICATOR

Automatic alert to change battery when needed.

SPECIFICATION	
Operating Range	0 to 14.0 pH
Resolution	0.1 pH
Accuracy	±0.2 pH
Battery	4 x 1.5V Button Cell (LR44)
Battery Life	Approximately 150 hours (cont. use)
Weight	Approximately 60gm
Size (L x W x H)	180 x 32 x 15 mm

TRANS INSTRUMENTS  ISO 9002 certified firm

water resistant - float on water - drop shock - simple to use

TRANS INSTRUMENTS

HortiCare

Plants Nutrient pH Check

Digital tester for the advance hydroponics grower



✓ for easy nutrient control

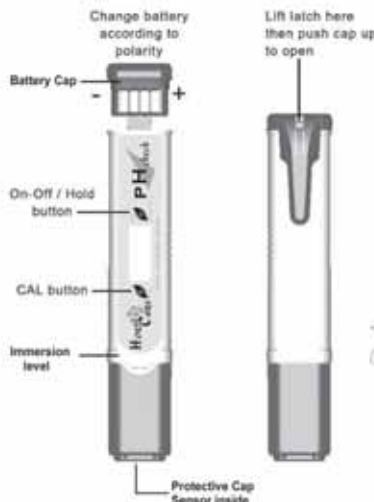
✓ for consistent harvest

✓ for healthy & lush greens

✓ for life science project

READ THIS INSTRUCTION SHEET BEFORE USE

UNDERSTAND YOUR PRODUCT



Installing Battery Cap:

The unit is shipped with the Battery Cap open, close the Battery Cap by pressing Cap on table top till the latch "click" for a secure lock.



How to open Battery Cap:

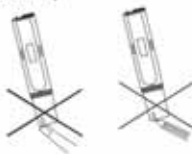
1 Use a mini screwdriver to lift latch till it pops up. DO NOT PULL latch out completely.



2 Use the thumb to push Cap forward as shown. Turn over to the front and pull Cap out completely.

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 splash proof and water resistant, it cannot come under high pressure underwater and is beyond repair if water gets into the unit. If it is dropped into water, retrieve it immediately and wipe dry with a cloth.

Do not store the unit under high temperature or direct sunlight. This will shorten the life span of the unit.



Do not store unit without the protective cap. Chemical in the unit will expire faster, thus shortening its life span.



Do not clean unit with thinner or solvents. This will damage the unit. Use only a damp cloth to clean unit if needed.



SPECIFICATIONS

Range	: 0.0 to 14.0 pH
Resolution	: 0.1 pH
Accuracy	: ±0.2 pH
Battery	: 4 x 1.5V Button cell (LR44 / A76 or equivalent)
Battery life	: Approx. 150 hours (continuous use)
Auto Shut-off	: Approx. 15 minutes
Product life	: 365 tests
Operating temperature	: 0° to 50°C
Case Material	: High impact ABS plastic
Size (LxWxH)	: 180 x 32 x 15mm
Weight	: Approx. 70 gm

MAKING MEASUREMENT

This tester is factory preset for Auto-Lock measurement.

1. Remove protective cap from bottom (See product layout.)
2. Press the **'ON-OFF'** button once to switch on. Display will appear blinking in a measuring mode.
3. **Always rinse the sensor area with water and shake the tester in the same way you would use a mercury thermometer, before each and every test.**



4. Once the reading is stabilised, the display digit will stop blinking. You can now take the reading.
5. Press the **'ON-OFF'** button each time to take another measurement.
6. If the sensor is dry, a slow response will result with 2 to 3 points off on repeated tests. Dip the sensor area in a cup of water or preferably pH7 calibration solution for 30 to 60 minutes before testing again.
7. Always rinse the sensor area with water and blot it dry before and after each test.

CALIBRATION

This tester is factory calibrated. But due to prolong storage, the unit should be re-calibrated before use.

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.

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

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

Order Code : 7010S (Satchel)
Order Code : 7010 (90ml)

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** blinking. **7.0** will be displayed in a blinking mode. When the display stops blinking and freezes, it indicates that the unit has been standardised. Calibration is completed.


5. Rinse the sensor area thoroughly with water. press the **'ON-OFF'** button to 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** appears, 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 calibrating to.**
3. Wait for the tester to sense a stable reading till display stops blinking. Calibration completed.

At anytime, pressing the ON/OFF button once will cancel and exit the calibration mode.

MAINTENANCE

- When **Err** appears during measurement or calibration, it means a stable reading cannot be established. This could be due to a dry or expired sensor. Try soaking the sensor in a cup of water for 1 hour and re-test. If this does not recover, it probably has expired.
- When **E7**, **E4** or **E10** appears during calibration, it means you have used a wrong standard solution. Make sure you have the right solution and re-calibrate.
- When the battery symbol  appears on the display, this indicates a low battery and only 2 hours of continuous use remain. Replace all four batteries according to instructions on the front page.
- 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 1 hour will restore sensitivity to the sensor.
- Keep in mind that all pH sensors age with time and usage. Therefore, re-calibration is necessary to maintain accurate reading.
- Note that the pH sensor has a limited life span of about 365 tests. When the unit fails to calibrate, responds slowly and out of accuracy, it means that the unit should be replaced. It is not possible to repair broken sensor, a defective or expired unit.

NUTRIENT CONTROL

The nutrient solution and its management are the cornerstone for success in hydroponics system. The pH of a nutrient solution decides the availability and absorption of nutrient by each species of plant. pH should be checked during startup of a new crop, and monitored at fix intervals up till harvest.

Another important parameter is EC reading. It should also be monitored at the same time.

Below is a reference chart on nutrient control:

CROPS	pH	EC	cF	TDS
Asparagus	6.0 ~ 6.8	1.4 ~ 1.8	14 ~ 18	1000 ~ 1300
Broad bean	6.0 ~ 6.5	1.8 ~ 2.2	18 ~ 22	1300 ~ 1500
Broccoli	6.0 ~ 6.8	2.8 ~ 3.5	28 ~ 35	2000 ~ 2500
Cabbage	6.5 ~ 7.0	2.5 ~ 3.0	25 ~ 30	1800 ~ 2100
Capsicum	6.0 ~ 6.5	2.0 ~ 2.5	20 ~ 25	1400 ~ 1800
Carrots	6.5	1.5 ~ 2.0	15 ~ 20	1200 ~ 1400
Cauliflower	6.5 ~ 7.0	1.5 ~ 2.0	15 ~ 20	1200 ~ 1400
Celery	6.5	2.0 ~ 2.5	20 ~ 25	1400 ~ 1800
Cucumber	5.5	2.0 ~ 2.5	20 ~ 25	1400 ~ 1800
Eggplant	6.0	2.5 ~ 3.5	25 ~ 35	1800 ~ 2500
Lettuce	6.0 ~ 7.0	1.0 ~ 1.5	10 ~ 15	700 ~ 1100
Garlic	6.0	1.4 ~ 1.8	14 ~ 18	1000 ~ 1300
Onions	6.0 ~ 6.7	1.4 ~ 1.8	14 ~ 18	1000 ~ 1300
Potato	5.0 ~ 6.0	2.0 ~ 2.5	20 ~ 25	1400 ~ 1800

NOTES ON MEASUREMENT

All pH sensors measure the hydrogen ion activity in solution, but if a solution is not stable, (e.g. tap water immediately taken from the tap) an erroneous reading may result. This is because water contains other active substances like chlorine, which interferes with the hydrogen ion activity. To maintain an accurate reading, take measurement only from water left overnight. Avoid measuring in moving liquid. Scoop liquid in a cup for measurement if possible.



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