

# TRANS INSTRUMENTS

INSTRUMENTS FOR THE PROFESSIONAL

## HORTICARE NUTRIENT CHECK OPERATION (MANUAL)

### PRODUCT SPECIFICATION

OPERATING RANGE	0~10EC ~100cf ~7,000PPM
RESOLUTION	0.1EC 1cf 100PPM
ACCURACY	±0.2EC ±2cf ±2%FS
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.

Each plant has its preferred nutrient concentration (or nutrient strength) to facilitate the absorption process to the roots.

Wrong concentration may result in wilting and suppresses plant growth.

The HortiCare Nutrient check is specially designed with advanced features to ensure fast and accurate measurement of this critical concentration.

It is for both the commercial professional as well as advance home grower.



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www.transinstruments.com

ISO 9001 Certified Firm

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



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Horticare Nutrient Check (Hydroponics)

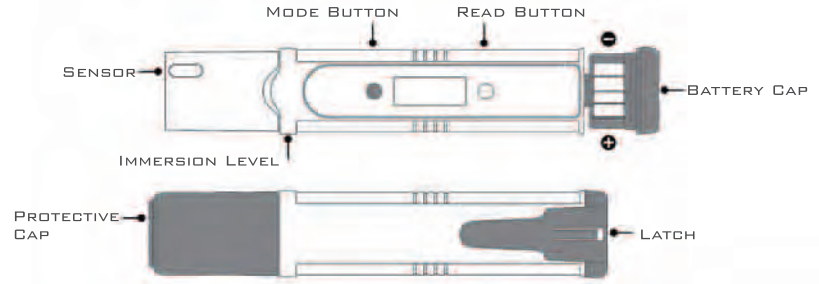
for maximum & consistent harvest . lush greens . lasting blooms

Nutrient strength in EC, cf or ppm - Auto End-point stable reading

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

ISO 9001 Certified Firm

## 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 to 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 separate it from the meter.
4. Replace all batteries according to polarity.

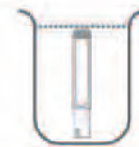


## PRECAUTIONS IN HANDLING

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



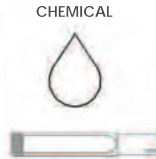
Do not submerge the unit underwater. Though the unit is water resistant, it cannot come under high pressure underwater. If it is dropped into water, retrieve it immediately and wipe dry with a cloth.



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.



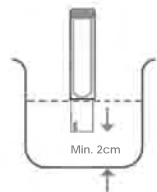
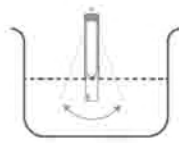
Do not clean unit with thinner or solvents. This will damage the unit. Use only mild detergent on damp cloth to clean and rinse unit if needed.



CHEMICAL

## MAKING MEASUREMENT

- Remove protective cap and dip sensor area into sample solution up to the immersion level, shake or stir to remove bubbles.  
**Note: Tiny bubbles on sensor will affect reading accuracy.**
- Press the Read button once and display will appear blinking.
- Dip the sensor area in liquid, shake to remove bubbles. If measurement is made in a cup, be sure to leave 1/2 inch or 2cm gap from the bottom.
- Keep still and wait for a stable reading. When the display stops blinking and beeps, an end point reading is established. You can record the readings.
- Always rinse the sensor area with clean tap water before and after each test. Press the Read button each and every time for a new measurement.
- To Switch off, press and hold-down the Read button for 3 seconds.
- Soak the sensor in a cup of clean tap water for 1/2 hour before storing.
- Replace protective cap while stored as this will prevent dust that can settle on the 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.

## MAINTENANCE

### CLEANING THE SENSOR

Always soak the sensor in clean tap water after each test. This will maintain the sensor's accuracy and prevent dirt from depositing on it. If dirt is deposited on the sensor, it will degrade the accuracy of the unit. If the sensor is dirty, soak the sensor area in mild detergent and agitate for 1-2 minutes will remove dirt. After soaking, rinse the sensor area thoroughly with distilled water and soak for another 5 minutes.

Perform a calibration after each cleaning.

### CALIBRATION

This unit is factory calibrated and does not require further calibration. But if readings are in doubt, perform a check using one of the below standard solution.

<b>ORDER CODE: SC1413</b>	<b>Standard Solution 1.4mS/EC (90ml)</b>
<b>SC0276</b>	<b>Standard Solution 2.8mS/EC (90ml)</b>
<b>SC0067</b>	<b>Standard Solution 6.7mS/EC (90ml)</b>

This meter has an accuracy of +/- 0.2EC. Reading within this range is consider accurate. If readings falls out of theses range, then calibration is necessary.

### CALIBRATION PROCEDURE:

- Do not perform calibration if the exact solution is not available. Calibration with incorrect solution will severely affect the unit's usability until it is re-calibrated correctly.
- Taking care of all requirements under section MAKING MEASUREMENT, dip the tester into the selected standard solution.
- Press and hold down both **MODE & READ** button simultaneously until **CAL** is displayed blinking then release. 1.4 will be displayed blinking. If 2.8 standard is used, press and hold-down **MODE** button until display shows 2.8. Pressing again will set to 6.7 and a third time return to 1.4 in a cyclical mode.
- Display must match the same value of the standard solution about to calibrate. Wait and keep still for the unit to automatically sense a stabilized reading till it stops blinking. Press the **Read** button again to check if meter is calibrated to that of the standard, otherwise redo step 3 & 4. Calibration completed.
- At anytime during calibration, pressing the Read button will terminate the operation.

### LOW BATTERY ALERT

When the battery symbol  appear on the display, this indicates a low battery and only 2 hours of continuous use remain. Though the unit may continue to function, the accuracy of the unit will be affected beyond 2 hours. Change the batteries according to instructions overleaf.

## CHANGING UNITS & ERROR CODE

### SWITCHING UNITS OF MEASUREMENT

This meter is factory preset to display EC measurement. Press and hold-down the **MODE** button each time and release. Display will switch units on each successive action with a beep in the following cyclical fashion:

EC (indicated by symbol mS) → cF (no symbol) → TDS (indicated by symbol ppm) → EC.

Unit will retain the last setting until you reset it or when batteries are removed.

### ERROR CODE AND TROUBLE SHOOTING:

- When Err/Erb/ErC is displayed during calibration or measurement, it means the unit cannot get a stable reading or timeout. Press Read to exit error mode at anytime.
- When the display shows " - - - " during measurement, it indicates an overranged reading. This means the measured reading is too high above 10EC or temperature is out of the meter's measuring range of 0 to 50°C.
- When the display shows " - - - " when switched on and before dipping into any liquid, it means the meter could be malfunction or damaged.
- Display does not show zero before it is dip into any liquid, make sure the sensor is dry and no dirt. If this persists, it could due to different humidity during manufacturing. Perform a factory zeroing as below:
  - Remove the battery cap to disconnect power.
  - Press and hold down **MODE** button and simultaneously replace battery cap and connect power.
  - Display will show "C 00" blinking. When the display shows 0, zeroing is completed.

## GUIDE TO HYDROPONICS PLANT 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 parameters is EC reading. It should also be monitored at the same time.

Below is a reference chart on nutrient control:

Flowers	pH	EC	cF	PPM	Vegetable	pH	EC	cF	PPM
African Violets	6.0-7.0	1.2-1.5	12-15	840-1050	Asparagus	6.0-6.8	1.4-1.8	14-18	980-1260
Anthurium	5.0-6.0	1.6-2.0	16-20	1120-1400	Bean (Common)	6	2.0-4.0	20-40	1400-2800
Antirrhinum	6.5	1.6-2.0	16-20	1120-1400	Beetroot	6.0-6.5	0.8-5.0	8-50	560-3500
Aphelandra	5.0-6.0	1.8-2.4	18-24	1260-1680	Broad Bean	6.0-6.5	1.8-2.2	18-22	1260-1540
Aster	6.0-6.5	1.8-2.4	18-24	1260-1680	Broccoli	6.0-6.8	2.8-3.5	28-35	1960-2450
Begonia	6.5	1.4-1.8	14-18	980-1260	Brussels Sprout	6.5	2.5-3.0	25-30	1750-2100
Bromeliads	5.0-7.5	0.8-1.2	8-12	560-840	Cabbage	6.5-7.0	2.5-3.0	25-30	1750-2100
Caladium	6.0-7.5	1.6-2.0	16-20	1120-1400	Capsicum	6.0-6.5	1.8-2.2	18-22	1260-1540
Canna	6	1.8-2.4	18-24	1260-1680	Carrots	6.3	1.6-2.0	16-20	1120-1400
Carnation	6	2.0-3.5	20-35	1260-2450	Cauliflower	6.5-7.0	0.5-2.0	5-20	1050-1400
Chrysanthemum	6.0-6.2	1.8-2.5	18-25	1400-1750	Celery	6.5	1.8-2.4	18-24	1260-1680
Cymbidiums	5.5	0.6-1.0	6-10	420-560	Cucumber	5.5	1.7-2.5	17-25	1190-1750
Dahlia	6.0-7.0	1.5-2.0	15-20	1050-1400	Eggplant	6	2.5-3.5	25-35	1750-2450
Dieffenbachia	5	1.8-2.4	18-24	1400-1680	Garlic	6	1.4-1.8	14-18	980-1260
Dracaena	5.0-6.0	1.8-2.4	18-24	1400-1680	Lettuce	6.0-7.0	0.8-1.2	8-12	560-840
Ficus	5.5-6.0	1.6-2.4	16-24	1120-1680	Onions	6.0-6.7	1.4-1.8	14-18	980-1260
Freesia	6.5	1.0-2.0	10-20	700-1400	Pak-choi	7	1.5-2.0	15-20	1050-1400
Impatiens	5.5-6.5	1.8-2.0	18-20	1260-1400	Potatoes	5.0-6.0	2.0-2.5	20-25	1400-1750
Gerbera	5.0-6.5	2.0-2.5	20-25	1400-1750	Pumpkin	5.5-7.5	1.8-2.4	18-24	1260-1680
Gladiolus	5.5-6.5	2.0-2.4	20-24	1400-1680	Radish	6.0-7.0	1.6-2.2	16-22	840-1540
Monstera	5.0-6.0	1.8-2.4	18-24	1400-1680	Spinach	6.0-7.0	1.8-2.3	18-23	1260-1610
Roses	5.5-6.0	1.5-2.5	15-25	1050-1750	SweetPotato	5.5-6.0	2.0-2.5	20-25	1400-1750
Stock	6.0-7.0	1.6-2.0	16-20	1120-1400	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