TRANS INSTRUMENTS
for the professionals

Salinity%–ppt
pH – Tem perature

Ope0 ration Manual

Salt water pool system sets new standards for swimming pool and spas for its low running cost over the year. Since salt as compare to commercial chlorine are far more economical.

Salt pool systems delivers a constant stream of pure chlorine generated from salt. The benefits of such systems replace the use of chloramines which are the source of irritations. The softening effects of electrolysis and reduction of dissolved alkali minerals offer soothing effects.

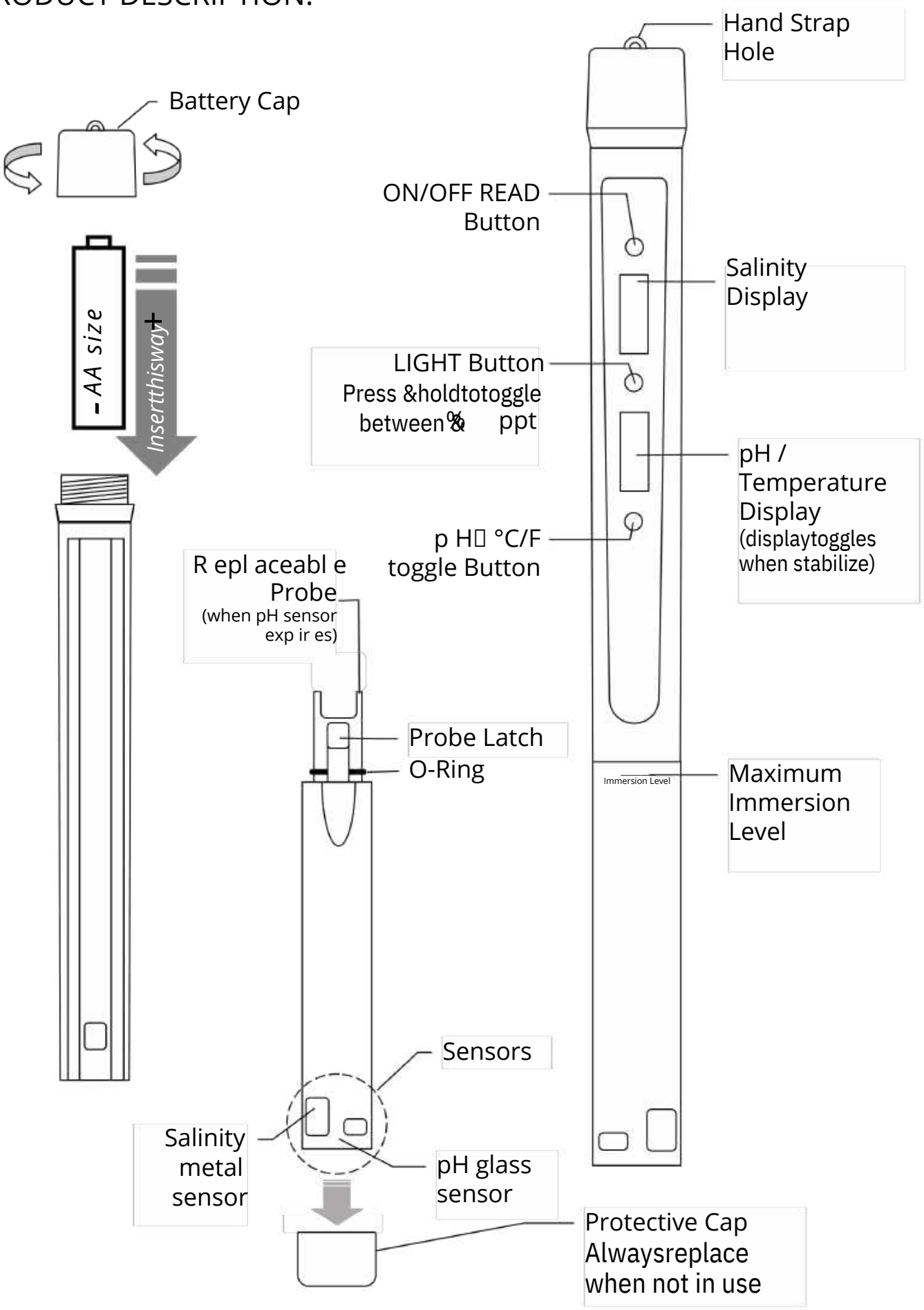
For people who are sensitive to chlorine, the controlled amount of pure chlorine generated is less offensive.

The key to salt pool maintenance is simple but yet critical. Salt due to its corrosive properties must be controlled so it will not corrode the expensive electrolytic cells. The SMART Pool CheckPro is a simple yet effective tool to check for an ideal salt concentration so you do not overload the system.

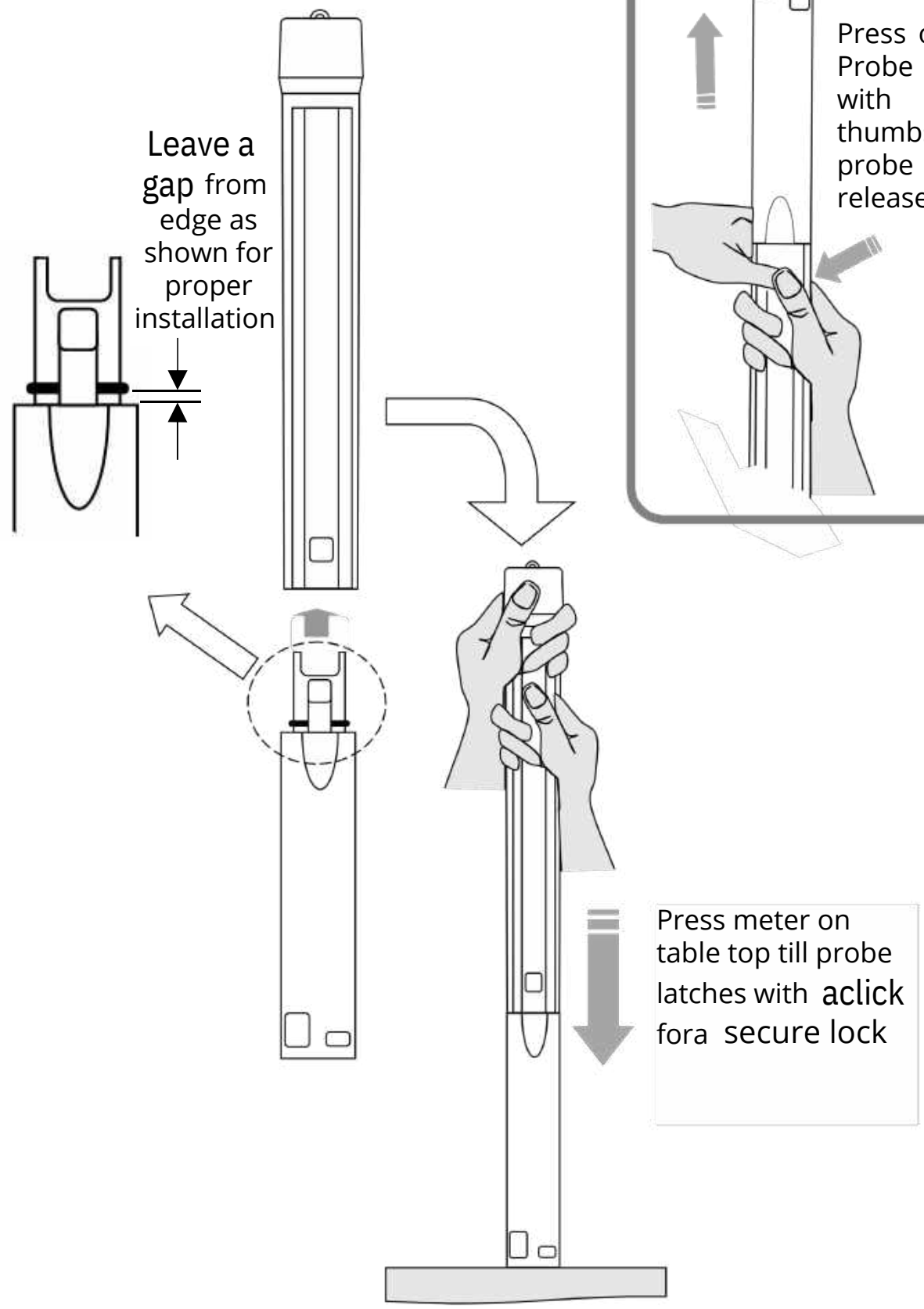
While chlorine is generated through the electrolysis process, pH will rise as a result. A higher pH reduces the effectiveness of chlorine, it isalso the cause for eye irritation. Therefore, balancing pH is necessary for proper sanitation and comfort.

The SMART Pool CheckPro is a 3-in-1 meter that measures salt concentration, pH and temperature in one go, eliminating guesswork and simplify calculation of salt application and pH balance.

PRODUCT DESCRIPTION:



INSTALLING PROBE: (back view)



SPECIFICATIONS:

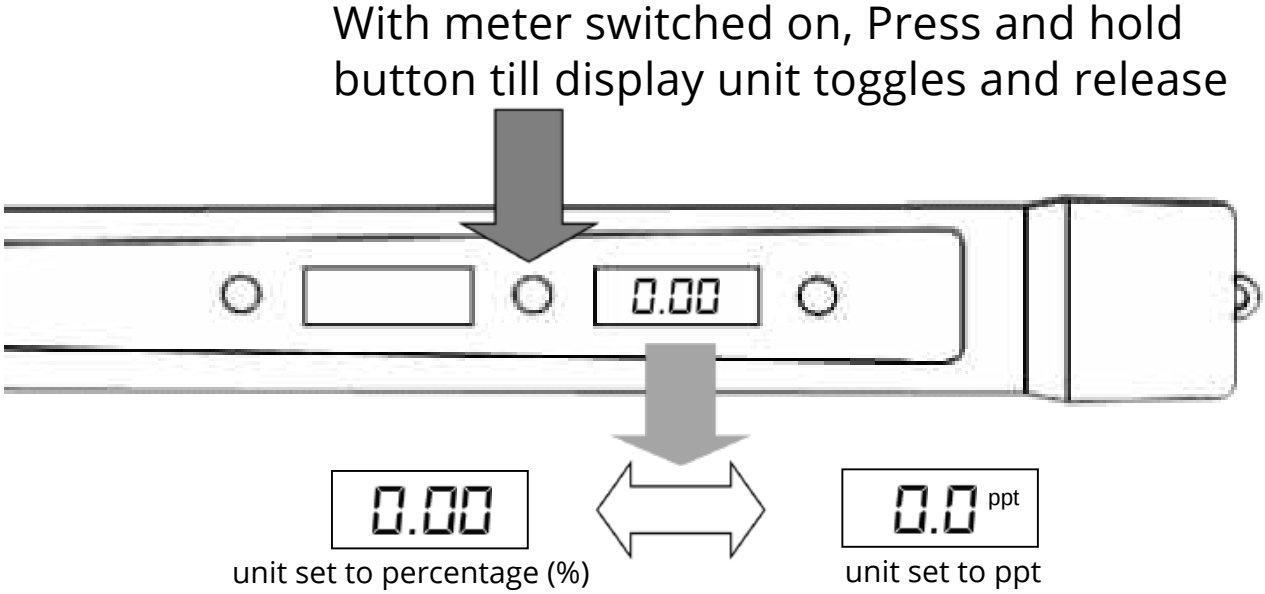
		PH	%	ppt	Temp.
Operating Range	:	0 to 14pH	0 to 1	0 to 10	0 to 50ºC
Display Resolution	:	0.1pH	0.01%	0.1ppt	0.1ºC
Accuracy*	:	±0.2pH	±0.02%	±0.2ppt	±0.5ºC
Temperature Compensation	:	Automatic 0 to 50ºC / 32 to 122ºF			
Operating Temperature	:	0 to 50ºC / 32 to 122ºF			
Battery Type	:	4 x 1.5V AA size battery			
Battery Life	:	Approximately 50 hours (continuous use)			

*Auto-lock is a feature that locks an endpoint reading within the accuracy stated above and repeated measurement will have varying readings within these tolerances.

SETTING SALINITY DISPLAY UNITS:

1. This meter is factory preset to the salinity unit used in your country.

   Unit of measurement can be reset to % or ppt (part-per-thousand) as follows:

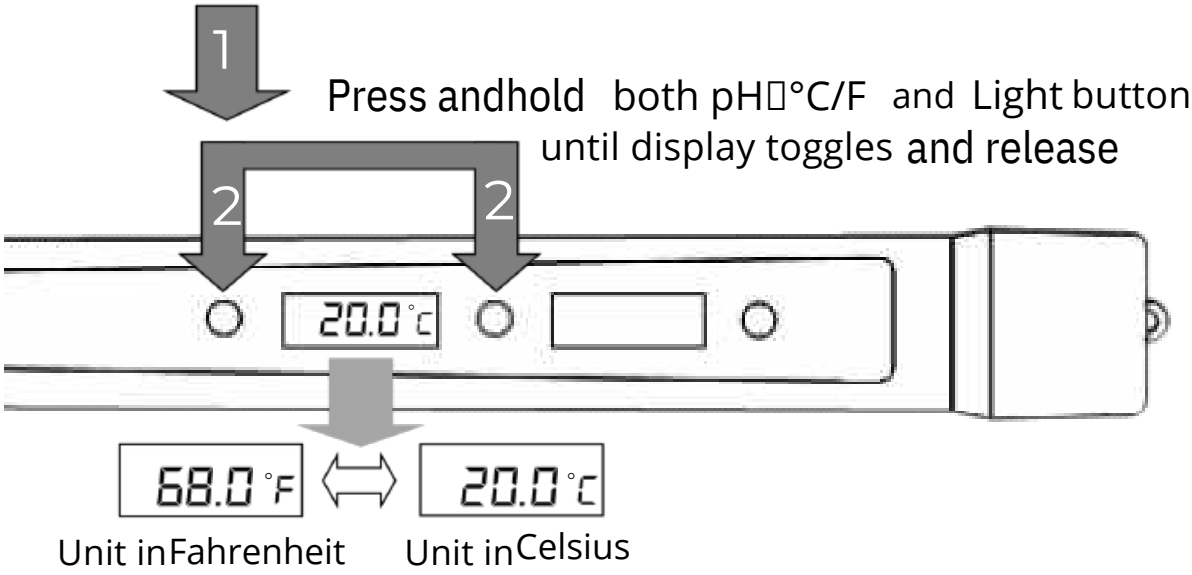


2. Display unit is set and retained till you reset it.

SETTING TEMPERATURE DISPLAY UNITS:

SettemperaturedisplayinCelsiusorFahrenheit in the following manner.

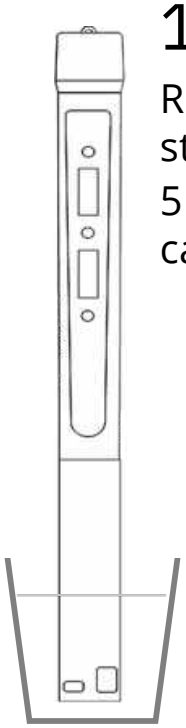
Press pH□°C/F button to display temperature



CALIBRATION:

Pr epar ati on:

For accuratecalibration, always follow the below procedure before preformingcalibration.

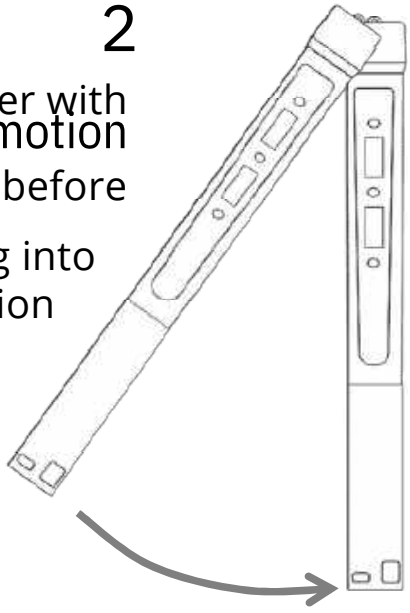


1

Rinse sensor and let it stand in tap water for 5 min. before calibration

2

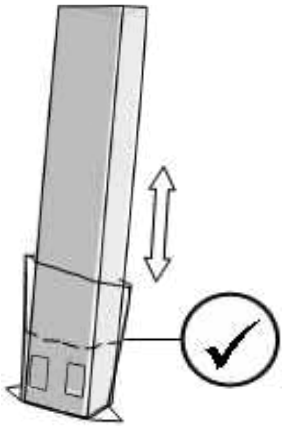
Shake meter with a snap motion each time before dipping into solution



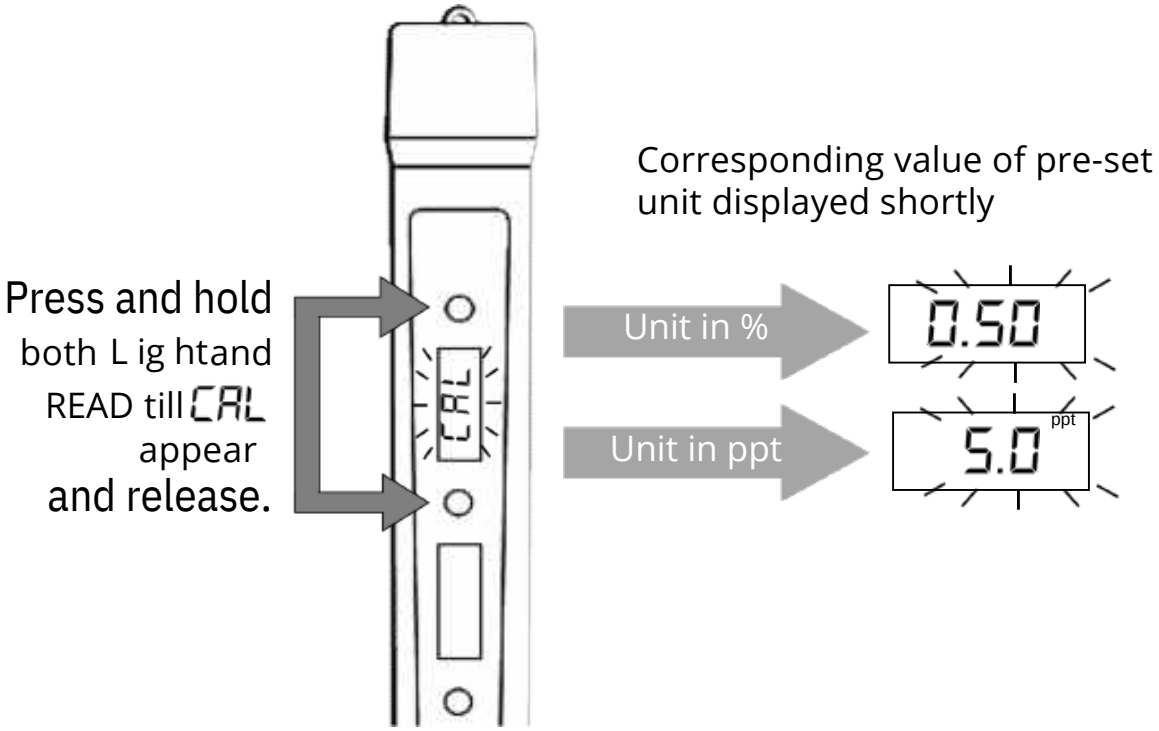
CALIBRATING SALINITY CONCENTRATION READINGS:

1. Use the attached CAL 0.5% / 5.0ppt standard solution for this calibration, additional solution can be purchased:

ORDER CODE	STANDARD SOLUTION
SS0005S	CAL 0.5% / 5.0ppt



2. Cut open the top edge short ends of the satchel.
3. Rinse the sensor area with water, blot dry and dip it into the calibration satchel (or cup) fully submerging the sensor with tip touching to the floor. Jiggle to remove any bubbles.



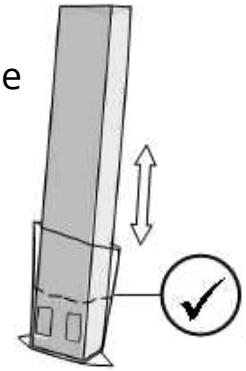
3 Wait for meter to sense a stable reading followed by a long beep to finish calibration. Press the READ button to confirm if readings show the same as the chosen standard, otherwise repeat the calibration.

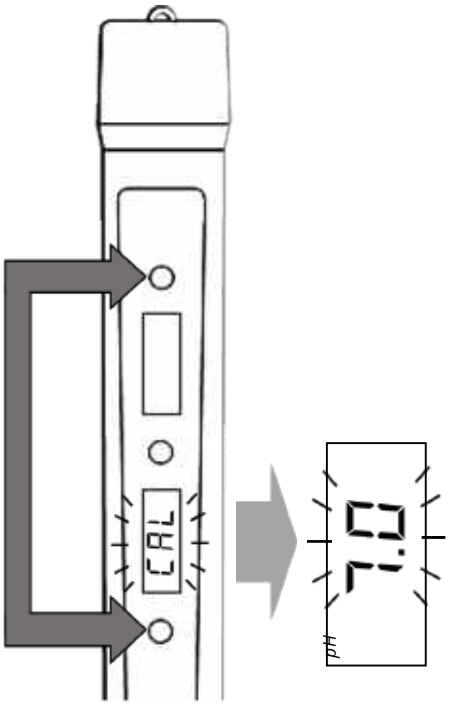
4 When reading is repeatable, calibration is completed.

5 The last set solution standard will be retained in all future calibration until it is reset.

CALIBRATING PH READINGS:

1 2 Use only pH7.0 buffer solution for this calibration. Rinse the sensor area with water, blot dry and dip it into the calibration satchel or solutions fully covering the sensor. Shake or tap to remove bubbles





3 Press and hold both pH□°C/F and READ buttons to enter CAL mode and release

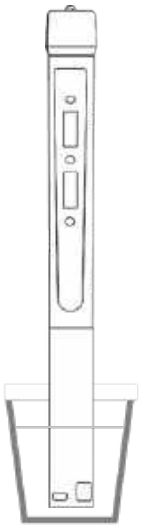
4 Wait for the meter to sense a stable reading till it stop. Press the READ button to confirm if reading shows otherwise repeat calibration.

5 When reading is repeated, calibration is completed. Rinse sensor thoroughly with tap water before making new measurements.

ERROR CODES

Error Code	Possible Reasons		Remedy
	pH	Salinity	
Erb	Meter cannot establish a stable reading during calibration 1. Wrong CAL solution 2. EC sensor dirty 3. Probe Expiry		pH- Replace with new Probe. Salinity- Sensor dirty. Do cleaning as Err
Err	Dry pH sensor due to prolong storage	Sensor is coated with oil or slime	pH- Soak sensor in water for 10-15 minutes Salinity- Rinse metal sensor in warm mild non-filming detergent then rinse thoroughly. Soak 10min. in pH7 after cleaning then re-calibrate

MAKING MEASUREMENT:

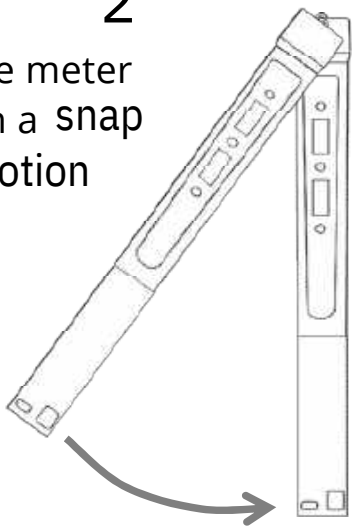


1 Rinse

sensor and let it stand in tap water for 5 min. on first use

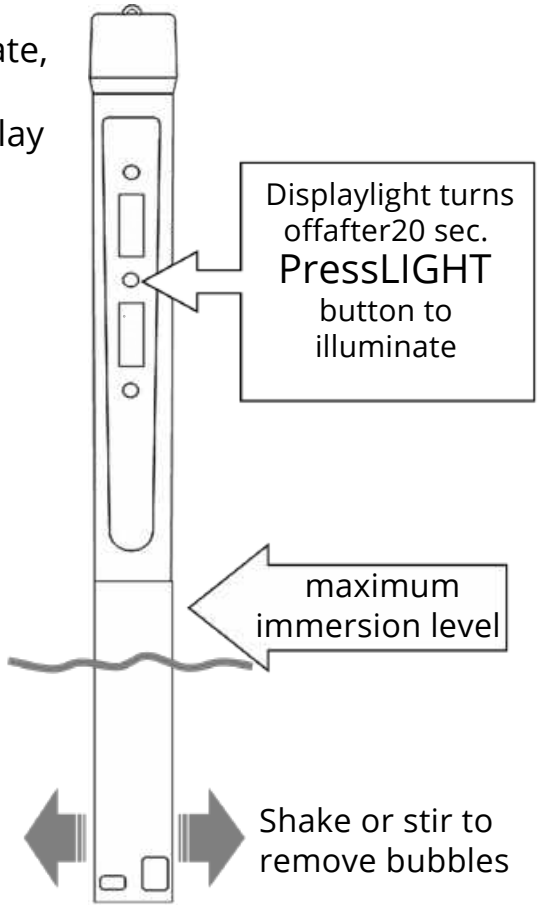
2

Shake meter with a snap motion



3 Dip sensors into nutrient and shake to remove bubbles. Press READ button and wait.

When display stops flashing and illuminate, a stable reading is established. pH display toggles between pH & temp.



4 Always rinse sensors with tap water and shake as step 2 between tests and before storing away. ** Always replace the Protective Cap when not in use or in storage.

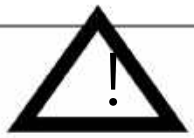
5 To switch off the meter, press and hold READ button.

If the pH sensor is expired, nutrient and temperature sensor will continue to function. So long Nutrient display stops blinking, both Nutrient and temperature readings can be taken. An Auto-lock need not be established.

Due to prolong storage / usage, the meter should be re-calibrated before a series of measurement or in doubt

PRECAUTIONERY NOTES:

- Never clean pH glass sensor with strong solvents like acetone orthinner. Damages to glass sensor void warranty
- Never soak sensor in water overnight or over weeks as it results inpremature expiry and void warranty. Keep in mind that the pH sensor will age and degrade over time subject to usage and storage conditions.
  The sensor has a usage life of about one year.
  When the pH reading becomes erratic or fails to be calibrated, the Probe should be replaced
- Always remove the batteries if unit is not use
  of time. Battery leakage damaging circuit board void warranty
- Wrong battery placement will damage meter
  warranty



Notes on measurements

The reading of this meter representsaccuratesalinityfor swimming pool only, it should not be used to indicate salt concentration of other liquid.

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

ERROR CODES

Error Code	Possible Reasons		Remedy
	pH	Salinity	
- - -	1. Normal behavior as no liquid contact on sensors 2. Sensor expiry	Solution is above 01% or 10ppt or temperature too high	pH-1. Dip in liquid 2.Replace with new probe Salinity- Dilute solution and re-test
Err	Dry pH sensor due to prolong storage	Salinity sensor is coated with oil or slime	pH- Soak sensor in water for 10-15 minutes Salinity- Rinse metal sensor in warm mild non-filming detergent then rinse thoroughly. Soak 10min. in pH7 after cleaning then re-calibrate
Display hangs	Due to intermittent power supply, micro-chip stops working		Remove Battery Cap for 10 seconds and replace
	Battery is low and accuracy will be affected		Replace all 4 batteries promptly

SALT WATER POOL MAINTENANCE GUIDE:

This is a reference guide only, please consult your chlorine generator specialist for more advice especially the ideal value to maintain salt level on specific system.

1. Once weekly vacuum the pool to remove dirt and debris accumulation.
2. Check the pressure or vacuum gauges on a sand or Diatomaceous Earth filter to determine if the filter requires backwashing. Backwash the filter following manufacturer's directions. Clean filter media with recommended cleaners.
3. Add water as needed. Check and adjust pH and total alkalinity. Test sanitizer residual and adjust the generator as needed to maintain sufficient chlorine level.

Monthly: Check salt level with SmartPool CheckPro. Salt levels not change rapidly and top-up as necessary once or twice quarterly.

4. To help reduce scale build-up on the salt generator cell, add small amount of sequestering agent every week. Which is far less costly than the expense incurred in acid washing or stain removal.

1. Add a cell protection chemical that helps reduce oil and grease build-up and protects and extends the life of the cell.
2. Add clarifier to help the filter in removing even the smallest particles that can otherwise lead to hazy water conditions.

3. Shock oxidize water with a non-chlorine shock oxidizer. Doing so regularly will help prevent red eyes, odours and skin irritation. It will also help the chlorine to work better.
4. Add an enzyme oil and grease digester to help break up scum lines and reduce filter fouling.

SALT APPLICATION GUIDE:

Itisgenerally recommended to maintain salt concentration in the range of about 0.3% to 0.5% (3 to 5 ppt) in the pool to allow constant stream of chlorine generation.

POOL CALCULATION BASICS:

0.1% = 1 ppt = 1 gm of salt in every 1Litre of water

1 kg	=	1,000 gram	0.454
1 Pound(lb)	=	Kilogram(kg)	3.785
1 gallon(US)	=	L 4.546 L	
1 gallon (UK)	=		

What is the amount of salt to add into the pond after a reading is recorded?
Here is an example if the target value of salt level in your pool water is to be 0.45% or 4.5ppt, below are the steps for adjustments:

1. Take a measurement of the pond water with the SmartPool CheckPro, say an example reading of 0.25% or 2.5ppt shows on the meter, then you need to subtract the target value from the displayed value on the meter:

   0.45 % - 0.25 % = 0.2 % (4.5ppt - 2.5ppt = 2ppt)

2. The result shows that an additional of 2 grams of salt is required for every litre of water (2ppt).

3. Calculate and find out the total volume of the pond water.

   Example: 1,500 litre or 396 US gallons or 495 imperial gallons.

4. Multiply the total volume by 2 ppt then divide by the factor in brackets ( ) corresponding to its volumetric units will give the required salt to add in kilograms.

   Pond volume multiply by ppt divide by (factor) = weight to add

   1,500 litre x 2.0 ppt / (1,000) = 3 Kg (6.6 lb)

   396 US gallons x 2.0 ppt / (264) = 3 Kg

   495 imperial gallons x 2.0 ppt / (330) = 3 Kg

5. Dissolve 3 kilograms of salt in a bucket and pour around the pool. Wait for several hours before making another measurement as it will take some time for salt to circulate evenly throughout the entire pond.

6. Repeat step 1 to 5 if further adjustment is needed.

PH ADJUSTMENT GUIDE:
Pool water pH is best kept in the range of 7.2 to 7.8. When pH remains below 7.2, the water is considered to be corrosive which results in etching of plaster and metals in equipment such as heat exchangers will result. Yet chlorine dissipates more rapidly at the low pH than would be used at normal pH levels.

Maintaining the pH higher than 7.8 has a tendency to form scale or cloudy water. Calcium, the major component in scaling, it is a relatively unstable mineral when the pH is high, calcium is not as soluble and it will have a greater tendency to precipitate resulting in cloudiness or scale. High pH will also reduce chlorine effectiveness resulting in the need to maintain higher chlorine levels to achieve maximum sanitization.

WHEN pH IS LOW BELOW 7.2
AddpHUpsodium(carbonate or soda ash) to raise pH.

WHEN pH IS HIGH ABOVE 7.8
AddpHDown comes intwo forms:

liquid acid (muriatic acid) or dry acid (sodium bisulfate).

Changes in the pH of pool water can be caused by many factors but the most significant cause is the sanitizer used. Since the sanitizer is the most frequently added chemical in pools, it can have a powerful impact on pH and overall water quality. Adjust dosage of chlorine generator as necessary.

LIMITED WARRANTY

Trans Instruments (S) Pte. Ltd.warranties the main unit for a period of 24 months and thesensor probe for 12 months or about 700 tests (whichever comes first) from date of purchase against all original manufacturing defects in material and workmanship. This warranty does not apply to the abuse, misused, probe expiry or tampering of the product.

If repairs or adjustments are required, upon sending, the product must be properly packaged and insured against possible damage or loss in the shipment. Purchase invoice MUST be accompanied in returned product or else warranty is considered void.

Send the product via courier service or parcel postage with freight fully paid. After verification that the product is within warranties, it will be repaired and returned free of charge. Trans Instruments reserve the rights of final decision of the verification. The product will be returned via courier service on freight collect basis.

TRANS INSTRUMENTS

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