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Multi Ion Meter

USER'S GUIDE

IMACIMUS

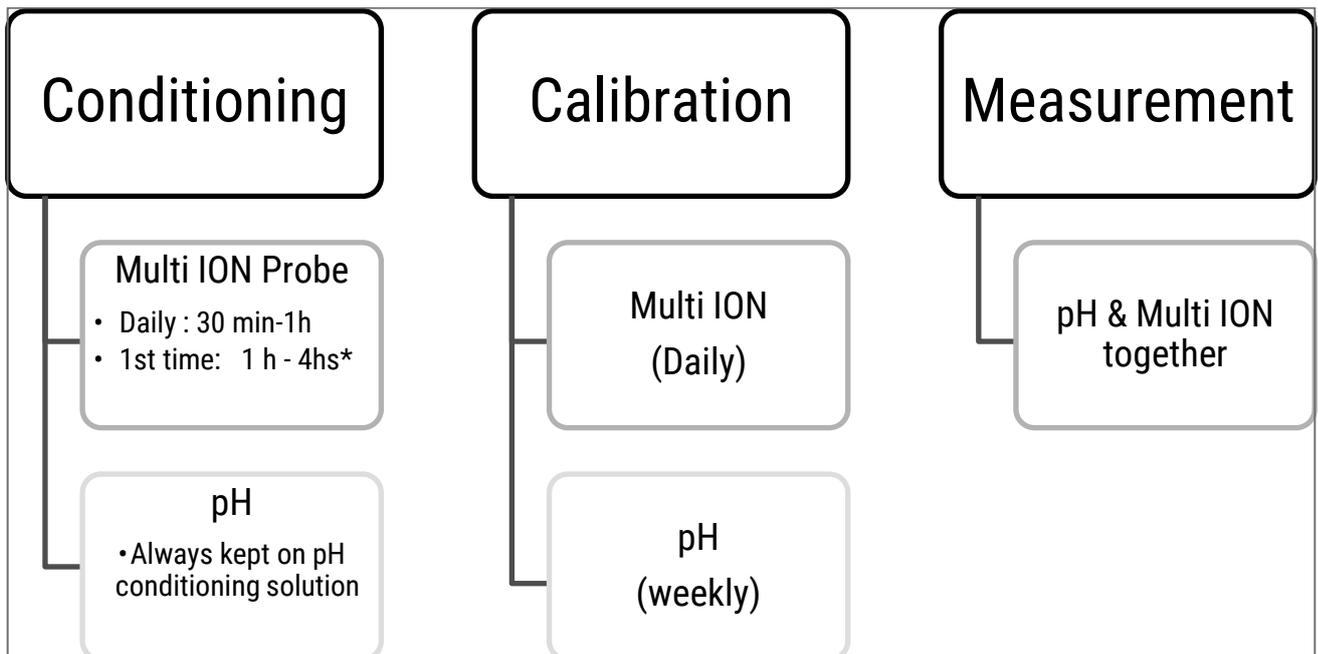*Content Table*

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Introduction

IMA CIMUS is a Multi ION & pH analyser.

- The aim of this document is to guide through the installation procedure of the software for IMA CIMUS equipment and for using the analyser for batch sampling/measurement.

Download the related software from: www.ntsensors.com or , software.imacimus.com open the installation wizard and follow the instructions. In the meter's software you can access to a detailed meter user guide. Please download it, and read the present document, before starting to use the IMA CIMUS. The software is a wizard that will guide you in the performance on the calibration and measurement/reading steps.

Basic steps

Conditioning	Calibration	Measurement
Multi ION Probe • Daily : 30 min-1h • 1st time: 1 h - 4hs*	**Multi ION** (Daily)	**pH & Multi ION together**
pH • Always kept on pH conditioning solution	**pH** (weekly)	

*Some ions could need longer condition period. If the calibration fails, please try to get larger conditioning time.

Software Download / Configuration

- Download the Software of IMACIMUS at:
- software.imacimus.com
- Register previously with a valid e-mail.
- Open the installation wizard and follow the instructions
- Plug the meter to the computer
- Click "IMA CIMUS" icon from Desktop

In the first attempt to use the software, you must plug the meter BEFORE running the Software. The Software will automatically detect what type of equipment you have acquired, in order to load standard configurations. If you miss this note, you can go to configuration → restore, and 1) plug the meter and 2) run the software.

For IMACIMUS 10

A) If **you have all electrodes for IMACIMUS (7IONS)*** then the probe is preloaded. Just go to next section. Check your documentation.

- Take a look on the quick-user guide in order to see a detailed picture of each step detailed in this userguide.

B) **If you have less than 7IONS/ parameters or Customized Electrode configuration**, you will be required to customize your probe in the software. Check your documentation.

- Go to Configuration and "Add Probe" ; Introduce a name of your Probe
- **Select "8"** (eight) as the number of ions. **Select the channels according to the parameters, and select none for empty channels.** Check your documentation to check. **pH always goes in the 8th channel as mandatory**
- Press Save Probe

For IMACIMUS 3,5

See your detailed probe configuration in your documentation. If you have standard equipment, all the configuration is pre-loaded automatically. If not, just go to the advanced section and add the probe according to your documentation.

IMACIMUS contents

- Multi Ion Modular Probe for up 7 (or 5 or 3) electrodes.
- Combination pH Electrode
- Multichannel meter
- USB cable (connection /power supply)
- Calibration solutions x3
- Conditioning solution x1
- Calibration solutions for pH x2
- User guide
- Carry case
- Stand case/holder (6 flasks x25mL)
- Inserted in the multiion probe: Modular electrodes (customized configuration)
  NOTE: Software is available at: **http://software.imacimus.com**

Meter Specifications

Technical features

- Input/Measure channels: 8 Channels
- Measurement range from -2500 mV to 2500 mV.
- Input impedance of 1e12 Ohms.
- Resolution of 0.1 mV.
- Working temperature: from 0º C to 70º C.
- Dimensions 155 x 90 x 35 mm.
- Weight 240 g.
- ABS enclosure
- Multipin connector (for Multi Ion probe input) / or USB connector
- BNC Connector (for Combination pH electrodes)
- Mini USB female connector type AB (for power supplying/communication to PC).

System requeriments

- Windows XP, Windows Vista, 7/8/10 or higher.
- Net Framework 4 o later (official link).
- IMA CIMUS Software (download from the NT Sensors site).
- Available USB port.
- Mouse and keyboard are required.
- The instrument is powered directly from the USB port connected to the PC, so it does not require any additional power supply.

Computer plug configuration

- Plug the mini-USB to meter
- Connect the USB to an available USB port of your computer
- The green led must be turn on.

Probes plug configuration

- Plug the Multi ION probe.
- Plug the pH electrode
- Screw 90º the BNC in order to ensure the connection

Multi Ion Modular probe

Multi ION probe is an electrode holder/ head for up to modular electrodes. All the electrodes work by indepent channels, and they are not affected one by each other.

(1) Rubber Storage cap

(2) Threaded ending (electrode protection)

Threaded ending (2) ONLY MUST BE TAKEN OFF in order to replace an electrode!

Multi ION probe configuration

The modular electrodes are specifically assigned in a position in the modular probe. If you have acquired all the standard electrodes for IMACIMUS , then the probe is preloaded. If not this configuration must be introduced in the software for the first time usage. If you have less than the maximum electrodes, you will be required to customize your probe in the software (refer to section Software Download and Configuration)
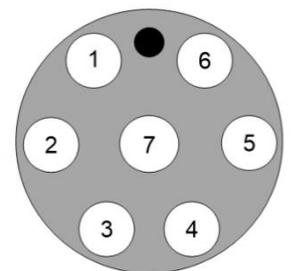
It is strictly required to introduce in the software the same configuration of the modular electrodes are placed in the probe.

Please check the [🔍] icon, and verify the same probe and order channels as appears in your equipment documentation.

A small circle defines the origin.

Standard Complete Probe configuration manufactured is (Calcium, Chloride, Potassium, Sodium, Ammonium, Nitrate and Magnesium)

IC10*	IC5*	IC3*
Channel 1: Ca2+	Channel 1: Ca2+	Channel 1: K+
Channel 2: Cl-	Channel 2: K +	Channel 2: NO3-
Channel 3: K +	Channel 3: Na+	*Channel 3:* pH (pH electrode)
Channel 4: Na+	Channel 4: NO3-	
Channel 5: NH4+	*Channel 5:* pH (pH electrode)	
Channel 6: NO3-		
Channel 7: Mg2+		
Channel 8: pH (the pH electrode is simultaneously used with Multi ION probe)		

If you do not have an electrode, you will have a dummy sensor to kept the hole protected. Just add a new probe(configuration menu) and selecte none.
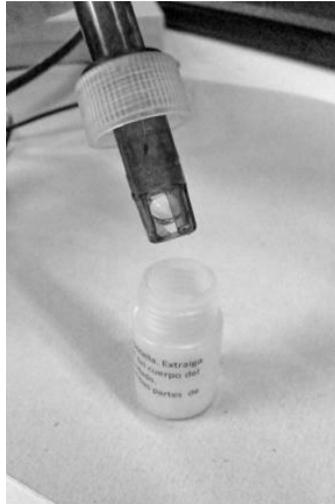
*This is the Standard Probe Configuration. Please Go to Advanced configuration for other probe configuration.

The pH electrode is composed by a glass-sensing module for pH and a reference electrode. It comes with a small reservoir that contains some conditioning solution for storing.

1.- Storage reservoir for the pH electrode.

2.- Unscrew the lower compartment.

3. Take-off both plastic parts in order to be used with the Multi ION probe.

The pH electrode must be stored in wet, with its specific conditioning solution for pH. The conditioning solution must be kept clean. The pH electrode is fragile, do not hit or make pressure over the glass bulb.

Stand case/holder

It is very important in the calibration and sampling processes, the probes must be kept in a stable position, without cable movements/solution movements.

The stand case/ holder contains six small flask that have to be used to condition, calibrate and sampling. Each flask must be filled aprox. ¾ of its volumen from the appropriate solution. Please take care on shaking vigorously the standard solutions (250mL bottles) before refilling the small flasks.

NOTE: Shake the standard solutions before using. Shake vigorously the standard solutions before transferring it to the small flasks.

Purpose of the stand case/holder with low volume flasks

Acts as stable holder for both probes (MultiION & pH) at:

Calibration/ measuring/ conditioning steps.

Avoid the standard solution contamination.

The small flasks solution must be replaced frequently, keeping always fresh the 250mL standard solution.

The solution from the flasks of @10mL could be used several times (~5 calibrations). This small volumen becames contaminated very quickly. Change the standards so frecuently.

The Deionized water must be refreshed every time; you can use a rinse flask

Introduce both probes (MultiION y pH) in the same flask. Allow to make the system became stable before press play in the software.

Use always the provided stand case with small flask as holder for probes!

Mother Solutions   Fill ¾ flasks/holder

Condition process   Calibration process   Sample process

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Multi ION probe

Take off the rubber cap from the probe with holding the reed and rolling in clockwise direction

The threaded protection with holes must keep in the probe.

Introduce the probe in the conditioning solution provided

Shake when introduce the probe in order to avoid air bubbles

If the probe is new or has been in a large storage period, the conditioning must be performed at least 30 min to a maximum of 4 hours.

In a daily or weekly use, it is necessary to condition about 10 -15 minutes once a day before calibration process.

Rinse the probe with DI water

Dry the outer body with a clean tissue

NOTE: The conditioning solution has a longer lifetime than calibration solutions. Keep it always clean and without external contamination.

Never left the probe / electrodes in DI water more than few seconds.

SUMMARY OF THE DAILY CONDITIONING PROCESS

Condition 10' daily   Rinse with DI Water   Dry externally

pH Electrode

The pH electrode must be stored in the conditioning solution provided with its reservoir. It is not necessary any other extra stage for conditioning.

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pH electrode calibration

The pH electrode must be calibrated separatetly from Multi ION probe. The pH calibration remains valid for a longer period of time. It is not necessary to recalibrate pH electrode for several days/ weeks related to the accuracy needed.

In order to do the calibration, use the pH buffers, of pH4 (red) and pH7 (green) . The provided pH buffer calibration solutions have a small reservoir in order to hold de probe with small volume.

Take off the white cap; press the bottle in order to transfer some solution to the small reservoir.

Get ready the electrode, take off the reservoir, firstly unscrewing, and removing it the reservoir (see pH electrode section) . Rinse the electrode gently with DI water several times before use.

Software actions :

* Run the software "IMA CIMUS" . Go to menu "Calibration"
* Select pH solution in the left configuration section.
  Follow the instructions shown at "Calibration process"

Be sure to properly rinse the probe with DI water and dry the outer body before introducing in the pH buffer.
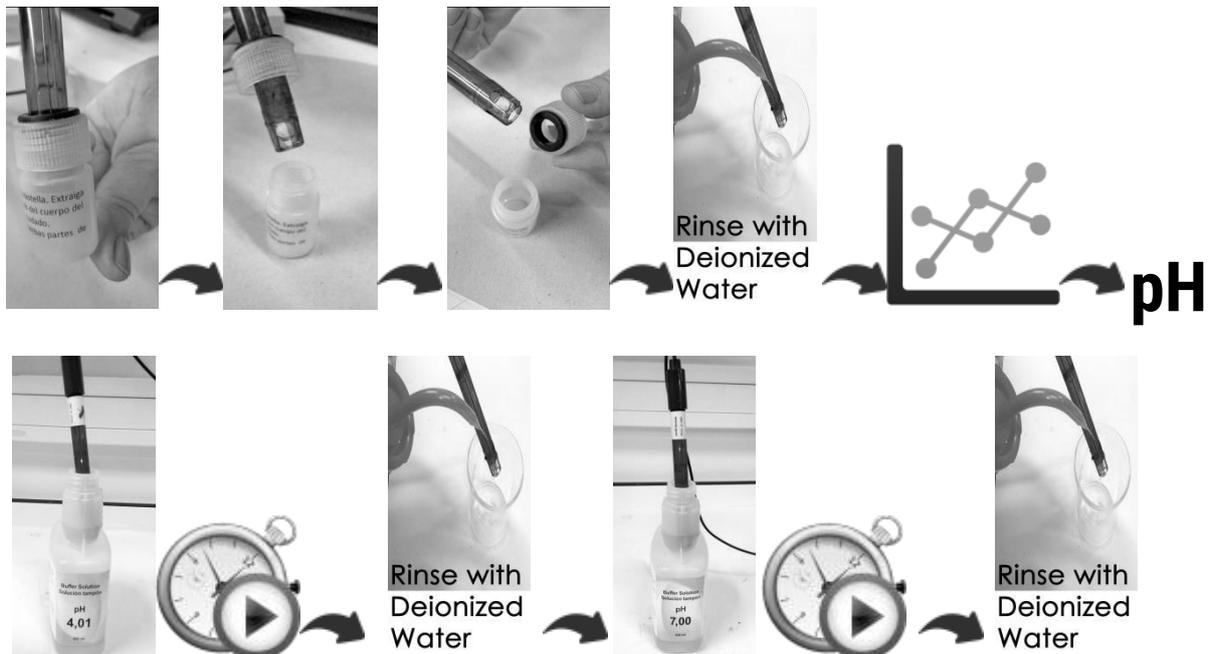
Shake slightly the probe when introducing in each solution to avoid air bubbles.

Left the probe remain quiet, motionless in the solution, do not move the cable , probe or meter during the calibration process. Press play button, and follow the instructions.

Between each buffer solution it is necessary to rinse with DI water, and it is necessary to dry the outer part of the body

SUMMARY OF THE CALIBRATION OF THE PH ELECTRODE

Please refer to the the IMA CIMUS software manual for other advanced configurations.

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Calibration of Multi ION probe

Once the pH probe is calibrated, then the Multi ION probe must be calibrated.

The Multi ION probe must be properly conditioned. (see conditioning section).
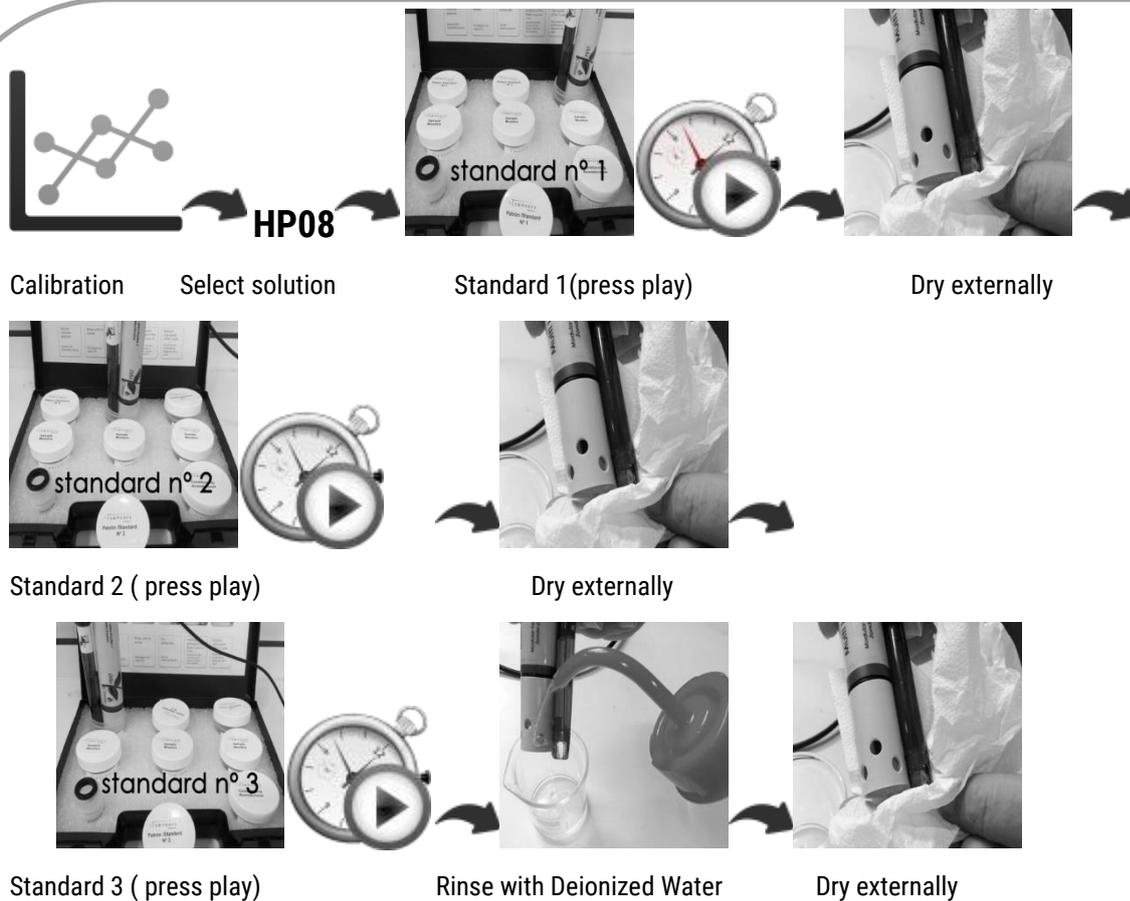
REMEMBER : You must use both probes simultaneously, since the pH probe is the reference electrode needed for the Multi ION probe. You must use both probes (pH & MultiION) either in calibration and measure steps.

In the menu "Calibration"

Select the solution "HP08" or other" XXXX" for Multi ION calibration

- Follow the instructions shown in the sector "Calibration process"
- Properly rinse the probe with DI water and dry the outer body **before calibration**
- Check no air bubbles present probes tip.
- Left the probe remain quiet, motionless in the solution, do not move the cable , probe or meter during the calibration process
- Between each calibration **do not rinse with DI water,** but dry the outer part of the body.
- Renew Calibration Standards after 5 uses!!!

Summary of the calibration process for Multi Ion

HP08

| Calibration | Select solution | Standard 1(press play) | Dry externally |

Standard 2 (press play)   Dry externally

Standard 3 (press play)   Rinse with Deionized Water   Dry externally

NOTE: Shake the standard solutions before using. Shake vigorously the standard solutions before transferring it to the small flasks.

Even the best before is some months, the lifetime of the solutions is related to its use, and the storage conditions (close after its use, do not cross-contaminate)

The meter allows to calibrate individual each parameter/ ION from a the same multiprobe, and then use it all together to perform measures. –> More information on Advanced Configuration/ Calibration Mode

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Measurement

Go to menu "Measure"

Introduce both probes (MultiION probe and pH electrode) in the flaks sample, do not remove the flask from the foam/case, shake them slightly, and left it resting .

Press the "play" button in order to obtain the sample data.

During the measure, the meter and the probe/cable have not to be moved.

Rinse with DI water. Dry the outer body with clean tissue paper.

Introduce the description of each sample in the first column. When finish press the button "Export" to store data.

Software actions:

Configure the measure details (advanced)

Ions to measure (all by default);   # Units (mg/L or mmol/L)

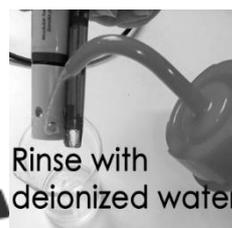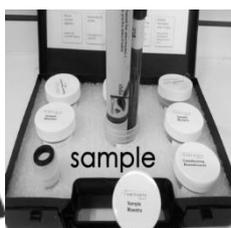# Calibration readjust* (see Calibration readjument section);

Copy data to clipboard

Export measures and calibration

How to take a sample/measurement

Calibration readjustment

This step performs a correction from the natural drift of the electrodes after several samples. If you require from high accuracy, this tool will help you to have the best results, after big data series, spending just 60 sec.

After some number of samples e.g. 10, Introduce both probes in the calibration solution nº 2 in order to readjust the calibration (see user guide NTx7P IM for advanced details). When the recalibration is finished, rinse both probes with DI water, and continue to take samples.

This action is in order to avoid using the three-points in the calibration maintain the high accuracy.

TIPS & practical issues:

The presence of solid particles or turbidity do not affect to the final result

Shake the samples previously in order to homogenize them.

The temperature of the sample must be similar to the calibration temperature

Do not leave the probe in the sample more than the needed minute in order to avoid the aging of the electrodes.

Quickly rinse with DI water the probe after each sample.

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Storage

Multi ION probe

Store the probe clean and dry. Always keep the black rubber protective cap when not in use. Do not leave the probe exposed to air if it is not being used

Storage for mid-term use. If you do not have to use daily the probe, you must dry it internally before storing. Steps for a proper storage:

- Rinse with DI Water
- Unscrew the protection with holes, carefully.
- Use a tissue paper to dry the surface of the electrodes. Just place the tissue close to the surface of the drops, to remove it.
- Screw again the protection with holes
- Place the plastic rubber protection cap on.

The protective cap must cover all the holes from the threaded ending. (see the picture below)
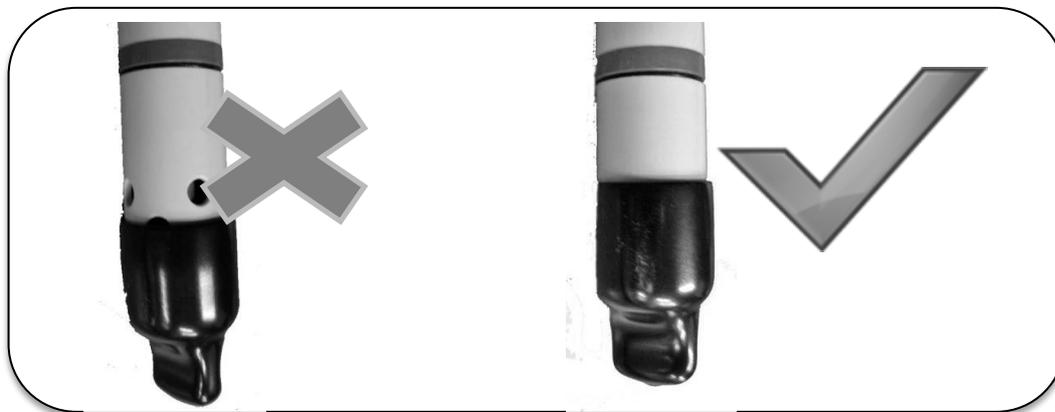
Keep in a cool and dry place, below 25 ºC.Do not leave it exposed to the sunlight or at high temperatures.

Do not touch, hit or grate the sensing area of the electrodes.

Rinse with DI water after each sample. Be sure of probe is clean before storing.

The probe **must not be left in DI water** o in samples more than the time needed to perform a measure- in order to avoid a premature aging.

Do not leave in high interfering solutions.

pH Electrode

The pH electrode has to be kept in the conditioning solution for pH electrodes. After use, the electrode must be replaced in its reservoir. Always keep the reservoir with liquid solution fill (4M KCl).

Unplug from the meter

Do not leave the probe exposed to air if it is not being used

Keep in a cool and dry place, below 25 ºC

Do not touch, hit or grate the sensing area of the electrodes.

Be sure of probe is clean before storing.

Do not hit or grape the tip, it can be broke the glass-membrane.

Store the ion meter unplugged from the computer.

Disconnect the USB cable.

Do not leave it exposed to the sunlight or at high temperatures

Replacing/upgrade electrodes

In order to configure properly the electrodes in the probe channel, please refer to the section Modular Probe Configuration

General recommendations:

Handle sensors with care

Do not touch the sensors tip by handling.

Great care has to be taken to do not damage the tip. The electrode can be irreversibly damaged if the sensor tip is hit or grated.

Use tweezers to handle the electrodes

Follow the indicated steps.

Place the CNT_ISE do it applying a small rotation with slight pressure until the "o" rings are completely placed on the holes and the pins are connected.

The electrodes have some silicone in the o-ring in order to install them easier.

In order to replace an electrode follow the steps:

Remove the protection cap and the threaded ending form the Multi ION probe.

Using the supplied tweezers, unplug the electrode that must be replaced. Hold the electrode for the intended tweezers position and simply take it out.

Remove the protection cap of the new electrode.

Introduce the new electrode using the tweezers with a spin movement.

The o-ring must not be seen from outside. You must listen a "click" .

Follow the channel order described on the multi ion probe configuration

After replacing all the sensors needed, replace the protector threaded.

The probe must be conditioned for at least 8h for the new electrodes

Tweezers position

Sensing Area

Place the electrode applying a small rotation pressure until the "o" ring are completely placed on the probe and the pin is connected.

Channel 1: Ca2+
Channel 2: Cl-
Channel 3: K +
Channel 4: Na+
Channel 5: NH4+
Channel 6: NO3-
Channel 7: Mg2+

"CLIC

Tips / Practical advices

Follow correctly the methodology:

Conditioning / Calibration/ Measure / Storage

When introducing the probe in a solution, shake it in order to avoid air bubbles. Left the system to stabilize before to press the start button.

Do not move neither the cable nor the meter during the calibration or measure processes.

The temperature range is from 5º to 45ºC, but the calibration solutions and samples must be at the same temperature

Measuring and calibration time periods must be the same.

Rinse generously with DI after its use.

Calibrate with the proper solutions:

Specific calibration solutions to a sample, pH and matrix.

The concentration of the samples must be in the middle range of the calibration curve.

Sample temperature equal to Calibration temperature (2ºC max, due the required precision)

After measuring multiple samples, use the function "calibration readjust" with the calibration solution nº2. This readjustment do not replace the calibration step

Calibrate every day of use.

Calibration parameters.

The slope of an electrode is a numerical value that defines the sensitivity of the electrode in relation to the concentration of the target ion variations in a solution. The slope is dependent on the chemical specie (ion) and its charge (monovalent/divalent / cations/anions). The software will guide the user in order to know if the slope is the desired for each kind of electrode. Please remind the slopes must be obtained at room temperature.

The pictogram only relates to the value obtained individually. If one electrode has a red cross, but the rest electrodes has a green tick, these will give reliable measures.

✔	Correct slope
✖	Renew calibration standards or Electrode exhausted. **Replace the electrode**

Common errors:

Check if the calibration has been correctly performed. Check that the calibration solution used and the probe are the same selected in the main menu.

The system allows entering decimals units. Check the values of the calibration solutions, in order to be sure they are correct.

The probe must remain properly conditioned.

NOTE: The present indications are only added as an informational purpose, and do not constitute a binding event. They are dependent from a proper user configuration by the user.

It must be remark that there is not a clear indication about the status of the reference electrode. The pH electrode integrates the reference electrode. If this electrode is aged, or broken, all the measures and electrodes will have no reliable outputs. Also, an aged pH electrode could lead to obtain wrong sensitivities for correct electrodes.

Correlation fit

Correlation coefficient (linear fit, R^2) . The lineal fit must be as close as possible to 1.

Good > 0. 99

Reliable 0.99> R2> 0.985.

Not good   < 0.985.

NOTE_ Usually, the correlation coefficient can be related with the solution cross-contamination. Also it can denote an aged electrode.

If one electrode has not a good correlation, it can be used to take a sample, because in the middle range of the calibration curve, it can show a good reading. Moreover, its slope must be checked and or it may be replaced.

	Recalibrate with the proper sequence of the calibration solutions
All the channels with r^2< 0.97	Check the solution status, shake it before use.
	Lack of conditioning
	Change the calibrations solutions
	Aged reference electrode → replace it
1,2 o 3 channels with r^2< 0.97	Recalibrate with the proper sequence of the calibration solutions
	Check the solution status, shake it before use
	Working electrode aged→ check the slopes of the electrode

Troubleshooting, possible causes and actions

Problem	Possible reason	Solution/Action
Invariable mV reading	No signal received	Check the BNC connection from the electrode to the meter. Ensure the selected on the meter channel is correct
		Remove air bubble in the sensing area.
No signal	-	Turn on the meter. Check the BNC connection from the electrode to the meter.
Unstable readings	Air bubbles	Shake the electrode in order to eliminate the presence of air bubbles(Sensing area is not immersed in the sample)
	Electrode damaged	Replace the electrode
	External noise	Turn off or disconnect the equipment that produces electromagnetic interferences (e.g. magnetic stirrer)
Slope not correct	Lack of condition	Condition the electrode at least for 8 h
	Standard solutions	Renew Standards
	Reference electrode/ Sensing area	Replace your reference electrode/working electrode
Out of scale values	Connection	Unplug and plug again the electrode
	Air bubbles	Shake the electrode in order to eliminate the presence of air bubbles(Sensing area is not immersed in the sample)

Unstability mV reading

If you detect unstable measures, it can be mainly from:

External noise: → unplug or turn of or disconnect the equipment that produces electromagnetic interferences (e.g. magnetic stirrer)

Low battery input/ power supply. The meter is powered through the USB from the computer. The computer must be connected to a good electrical charge. If you are using a laptop you can use it only with the batteries.

If you have more instruments or peripheral equipment connected to the computer, please disconnect it.
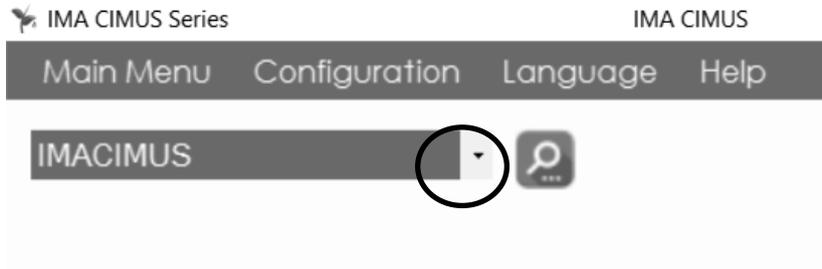
Electrodes specifications

	Calcium	Chloride	Potassium	Sodium	Ammonium	Nitrate
Slope (mV/decade), (primary ion solutions)	24±5	-51±5	54±5	54±5	54±5	-54±5
Measuring range (mg/L)	0,4 to 4000	1,3 to 35000	0,3 to 3900	2,3 to 23000	0,09 to 9000	0,6 to 31000
Measuring range (mmol/L)	0,01 to 100	0,04 to 1000	0,01 to 100	0,1 to 1000	0,005 to 500	0,01 to 500
Optimum pH working range	3,5 a 8	2 a 12,5	1 a 9	1 a 9	4 a 8,5	2 a 11
Working temperature T (ºC)	5 a 50	5 a 50	5 a 50	5 a 50	5 a 50	5 a 50
Response time	<1 min	<1 min	<1 min	<1 min	<1 min	<1 min
Main interferences (selectivity coef.[log Kij])	$H+$ (-2,9) Mg2+ (-3) Na+ (-3,6) K+ (-3,6)	Ions Ag+, S2-, Br- o CN- If are present in the sample will give unreliable readings*	NH4+ (-2,1) Ca2+ (-3,9) Li+ (-4,3) Na+ (-4,6)	K+ (-2,5) Ca2+ (-3) Li+ (-3,2)	K+ (-0.8) Na+ (-2,7) Mg2+ (-3,2) Ca2+ (-4)	Br- (-1,2) NO2- (-1,7) OH- (-1,8) Cl (-2,8)

*Iodide ions (I-) will irreversibly damage the chloride membrane. Avoid solutions containing Iodide ions.
The parameters shown in the table are from standard solutions containing single salts of the primary ion, at 25ºC.
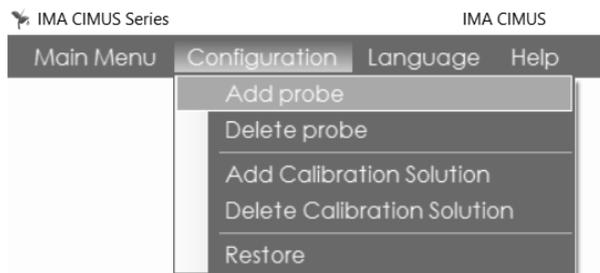
New or Customized Probe

Clicking on the dropdown button displays the set of probes or sensors that the user has introduced. By selecting a particular probe, the ions will be detailed by clicking the icon
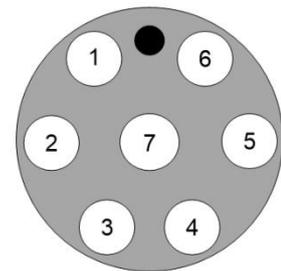

Add a new probe

To introduce a new probe, go to "Configuration" in the menu bar at the top of the screen.

Once there, choose "Add probe." A window appears where you must enter:

- The name of the probe.

- Total number of ions/probes to use simultaneously

- Identify the ions according to their channel position. (Each Ion is placed on a specific position, you can find the configuration list on your probe's detail in delivery note).

- If you want an specific channel order, just place the electrode with the same physical order on the multiion probe (see picture/layout from multiprobe)

- The meter allows to calibrate individual each parameter/ ION from a the same multiprobe, and then use it all together to perform measures.

DELETE PROBE

- To delete a probe, go to "Configuration" in the menu bar at the top. Click the drop-down button, select the probe you want to remove and click "Delete".

Standard Solution Configuration

Add your customized standards solution

Configuration→Add Calibration Solution

A window appears where you must enter the name of the calibration solution, select the number of calibration standards (from 2 to 5) and select the desired concentration units (those that appear in the supplied standards).

Steps:

- Give a name for the solution
- Select number of standards
- Add Ion
  o The added ions appear in the information box on the right side of the screen.
  o Repeat the process for each Ion content in the standard solution.
- Save solution.

You can check all the available standard/calibration solutions in the Menu CALIBRATION

Advance Mode

When display the advanced options, you could check (tick) on the Advance Mode.

This will display the calibration record output with a detailed report for each parameter, with the slope, intersection and correlation fit. This option will update the window.

Acquisition time

The selection of acquisition time of the analysis depends on the response time of the contained ions in a probe (indicated in the technical specifications).

When the probe is in the right standard, the user decides when to begin the measurement of each point. Depending on the selected acquisition time, the software will record the potential shown by the sensor after this time (1, 2 or 3 minutes).

You must select the same acquisition time at calibration and measurement processes.

> NOTE: If you have sensors with different acquisition time, always select the larger response time.

Calibration mode

In this section the user chooses how to calibrate the probe or the measuring system: "Simultaneous" to calibrate simultaneously all ions or "Custom" to calibrate them separately or individually.

The software stores the last calibration for each single ion until a new calibration of such ion is performed. Or if restart initial configuration is done.

In the mode "Simultaneous", all the ions contained in the standard solution are going to be calibrated at the same time (middle box not active). The probe will be calibrated with all the selected ions simultaneously.

In the "Customized" mode, the user can select in the middle box the ions to be calibrated. Once finished the calibration, the user can select the remaining ions and calibrate them in a second calibration process.

The meaning of this calibration is to use standard calibration solutions for each single Ion or parameter, as classical laboratory practices. Although, when all the ions are calibrated, the measurement of all together will take place, saving time on sampling measurement.

Also, if there are specific ranges that a multiion calibration solution could not reach, or does not have, different solutions could be used to reach the best calibration curve for each individual parameter.

Through the drop-down button "Calibration solution", the user can choose the solution to calibrate each set of ions. An information box list all the ions contained within the calibration solution.

Warranty

NT Sensors SL supplies the ion meters with 2 years warranty against manufacturing defects from the invoice date.

The electrodes warranty is valid through a 3 month from the invoice date. The warranty covers any manufacturing defect.

It must be note than the lifespan of the electrode could be less than this warranty period due to the use, the sample type/matrix, or the storage conditions.

NT Sensors will replace without additional cost the electrodes which, after being revised by its technical post-service have been considered as "defect from origin".

Warranty limitations

The Guaranty of the sensors does not cover the defects caused by:

-inadequate use,

-the usual aging of the sensor,

-the logic premature aging caused by certain samples,

-the damaged caused by accident.

Assistance and technical support

With the acquisition of a IMA CIMUS, Multi ION and pH Analyser, you are not going to be alone doing the measurement.

A team of technical experts is available for:

Fit the best calibration solutions to your application

Doubt resolution in the installation and start-up

Daily measures and system evolution.

Overall advice.

Please contact to the Technical Service Assistance for customers from NT Sensors.

E-mail: tech.support@ntsensors.com

Skype: ntsensors

Phone: (+34) 977 653 925

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