LabCom Easy (V2.0)

Software for data acquisition from laboratory instruments-PC

User Manual

The continuous improvement of our products can bring about differences between the information written in this manual and the purchased product.
The information, figures and descriptions contained out in this manual cannot be legally asserted.
HACH reserves the right to make changes and corrections without prior notice.

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COMPONENT LIST

The LZW8997.99 includes:

- CD with the software LabCom
- USB Flash drive, it must be connected to one USB port of the PC after the installation of LabCom Easy.
- Cable with connector BD-9 female for connection of the instrument to the PC (LZW9135.99)
- USB- to-Serial Convertor, useful when the PC does not have RS232C communication port.

PRESENTATION

LabCom Easy is software created by HACH for acquisition and management of the obtained results from up to 4 instruments sensION (pH-meters, conductivity meters and /or multimeters).
Using LabCom Easy it is possible to:

1- Store the measuring results in a data base where the data can be viewed and printed.
2- Store the calibration data in a data base where the data can be viewed and printed.
3- Print reports of individual samples or results summary from several samples.
4- Export data to Excel or csv (coma separator values) file.

"On Line" results from the instrument

Every instrument has a window where the calibration data and the daily measuring results are shown.
Measurements table personalization: LabCom Easy allows to the user to select the information displayed on the results table and its order.
"On-line" Graph view during measurement: If the option "Graph" is selected (see Configuration), during measurement, the graph evolution will be shown on the PC display.
Samples identification sending: If a manual ID is selected (see Configuration), the samples ID should be introduced from the PC or can be import from Excel file or from csv file.

Data Base

LabCom Easy has the required tools for management of all data received from any of the connected instruments and stored in the Data Base.
Data Base Query: A full range of searching criteria allows visualizing among all data (measurements and calibrations) only the results which are of interest at that moment. A flexible and easy way to manage data in the data base.
Results export: The results export to an EXCEL file "xls" ("xlxs" in Excel 2007) or to csv file simplifies the unification of the digital formats.

OPERATING REQUIREMENTS

Important

This software operates with Windows 2000/XP/Vista/Windows 7.

- Depending on the system, Administrator rights might be required for installation.
- The numeric format for decimal separator must be a point "."or a coma ",".
- In Regional and Language Options of the PC, the short format of the date should dd-mm-yyyy or dd/mm/yyyy.
- The PC must have one USB port for the connection of USB flash drive. The drivers required for the recognition of the USB flash drive are installed automatically during the installation of LabCom.
- The connection cable between the instrument and the PC requires that the RS232 port of the computer has a connection DB-9 male. If the computer does not have DB-9 male connection hence USB port can be used as RS232 port. In this case the supplied USB-to-Serial Converter must be used.
- In the case of more than 1 connected instrument, a communication port RS 232 (USB port + USB-to-Serial Converter) and a cable (LZW9135.99) are required per instrument.
- The connection cable instrument-PC (LZW9135.99) is 3 m long. Longer cables available upon request.

Program location

The installation program creates a folder called HACH in the directory C:\Program files\ HACH\LabCom Easy. The data base files are in the folder Data Base and the setup files are placed in the folder SetUp. The program and the files corresponding to the data base are memorized in the created folder called LabCom Easy.

Security

The user can not erase any result stored in the Data Base.

Important: It is recommended to perform periodically back up (security copies) of the folder LabCom Easy placed in C:\ Program files \ HACH.

USB flash drive

The USB flash drive has to be connected to the USB port of the computer after the installation of LabCom Easy and it must remain connected. The drivers are installed automatically with the LabCom Easy installation.

USB-to-Serial Converter

The LZW8997.99 includes an USB-to-Serial-Converter for computers that do not have RS232 communication ports. Prior LabCom Easy use, the USB-to-Serial Converter drivers must be installed (see User Manual of USB-to-Serial Converter). The drivers and the user manual can be found in the box containing the converter.

Program deinstallation

Go to Start→Programs→Folder HACH→Folder LabCom Easy→select "uniinstall LabCom Easy".

Go to Program Files and delete the folder LabCom Easy.

Re-start the PC if a new version of LabCom Easy is going to be installed.

GETTING STARTED

INSTALLATION OF THE PROGRAM LabCom Easy

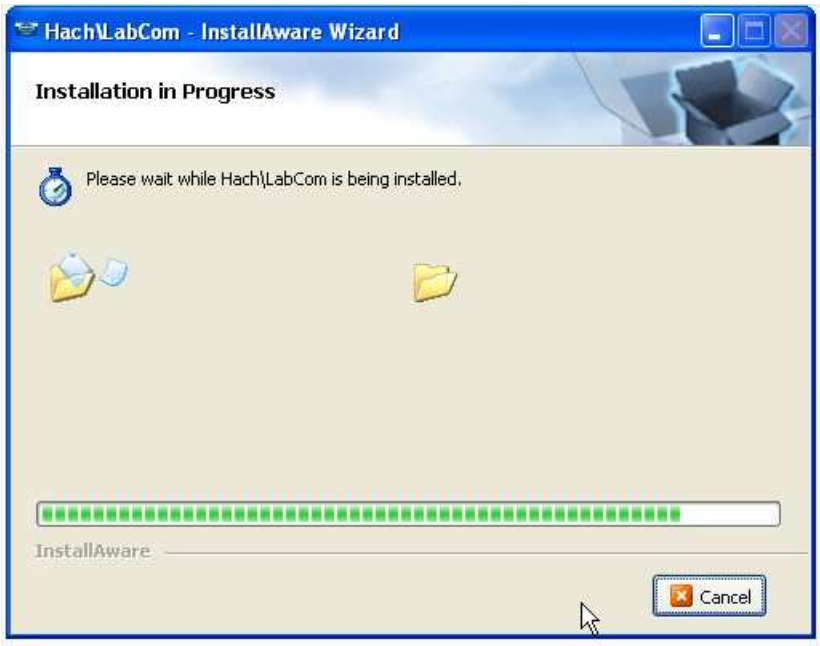
The installation disk contains Autorun software that will install the LabCom software on your Windows system. Carefully follow the steps below. If at any point problems are encountered with the installation, cancel the installation process and start over the beginning.

Insert the installation disk into the CD-ROM drive. After few moments the installation will start.

At that stage, the user must accept the license agreement.

Press **Next** to continue

Press **Next** to continue



The program installation is carrying out

LabCom Easy creates a direct access on the computer desktop.

HARDWARE CONNECTION

Connect the USB flash drive to the USB port of the computer. Ensure that the light on it is switched on (green).

INSTRUMENT PREPARATION FOR COMMUNICATION

The instrument must be connected to the PC with the corresponding cable LZW9135.99. One cable end should be connected to the rear panel of the instrument, connection “RS232C Printer/PC”. The other cable end should be connected to the RS232 connection DB-9 male of the computer.

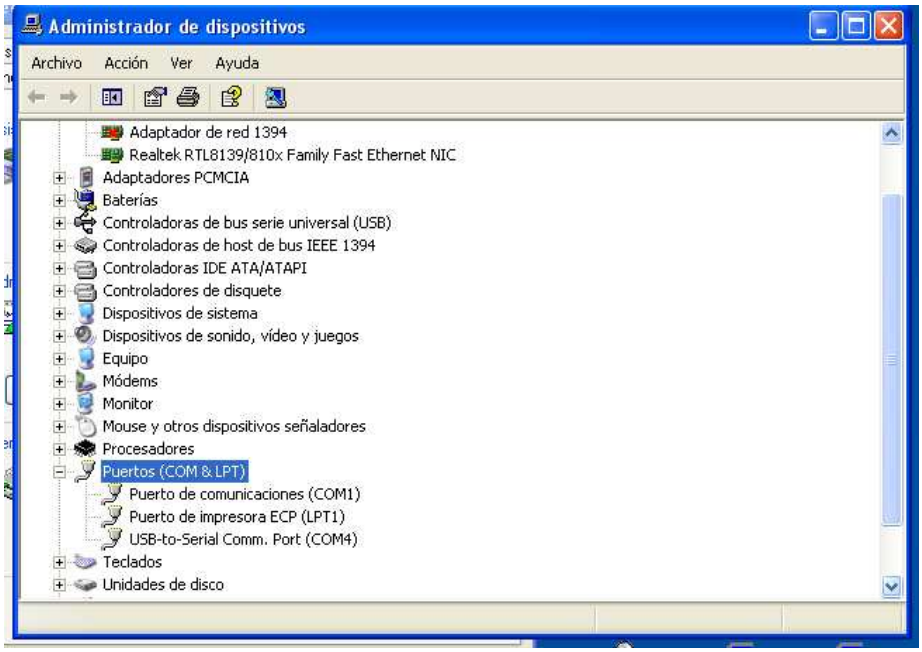
From the Main Menu of the instrument select: **SYSTEM**
Data output
For computer
LabCom Easy

Important: Go back to the main menu of the instrument.

⚠ **Attention:** If the instrument has a software version less than v.1.4, it must be updated. Follow the instructions in chapter “Software updating”, page 43.

RS232 SERIAL PORT

If you are using a USB-to-Serial Converter to connect the meter to USB port of the PC, you need to check the **Device Manager** of your PC to see what the exact port number is. Right-click on **My Computer** icon. Click on **Properties** and pop-up menu to open System Properties. Click **Hardware** tab and then click **Device Manager**. See the applicable COM port name under ‘Ports (COM & LPT)
as shown below



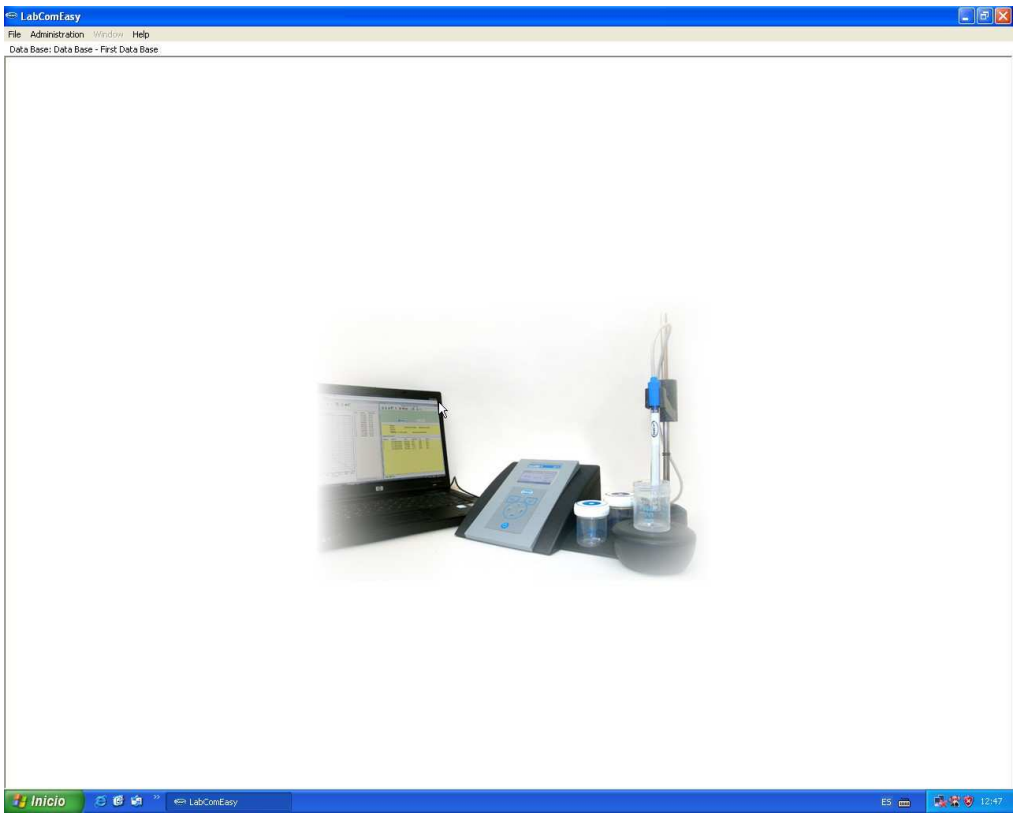
PROGRAM START

Click over the generated icon on the computer desktop.

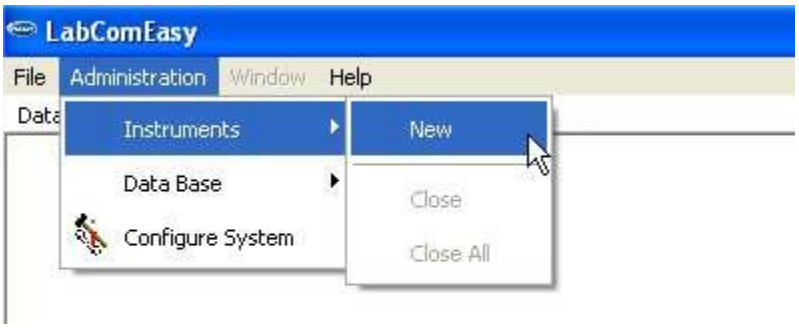
When starting for the first time, the program asks for the language.

Mark the desired language and accept.

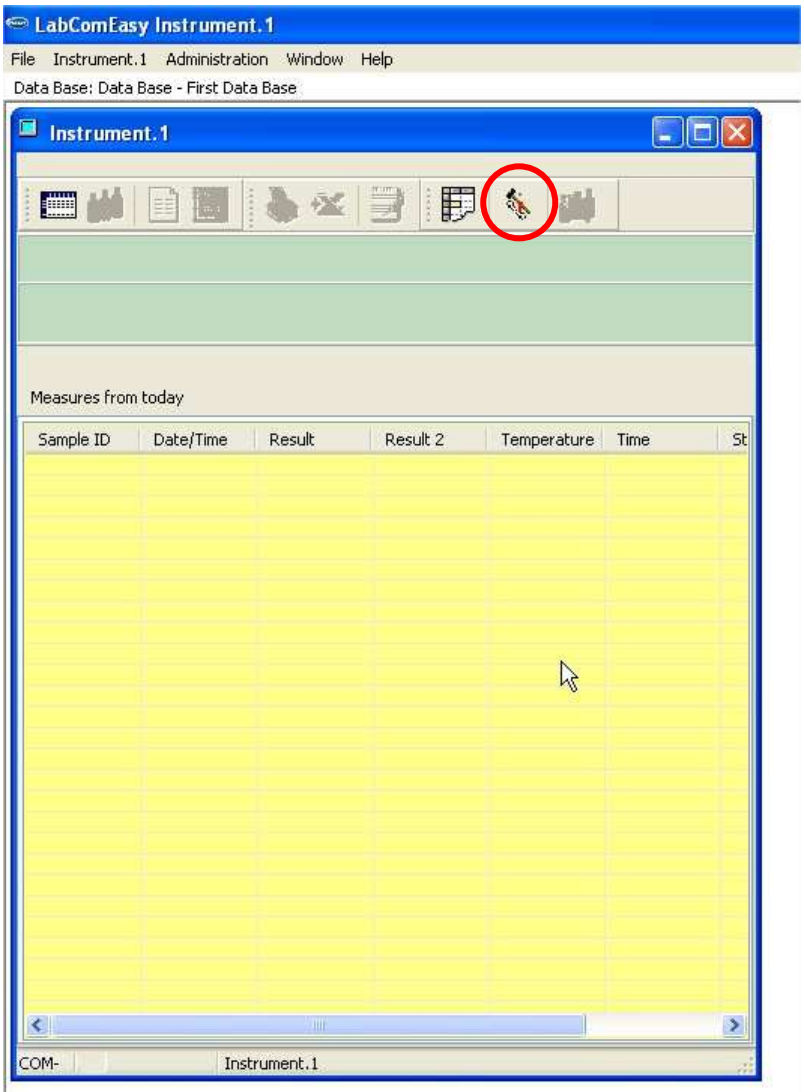
The generic window of the program is opened.



INSTRUMENT CONFIGURATION

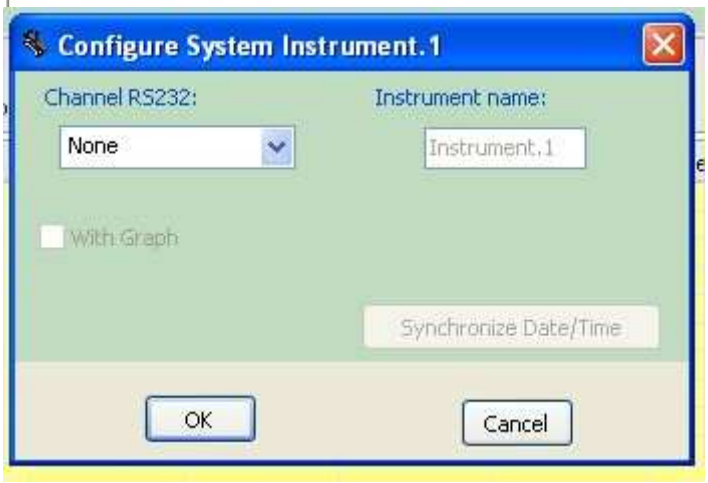


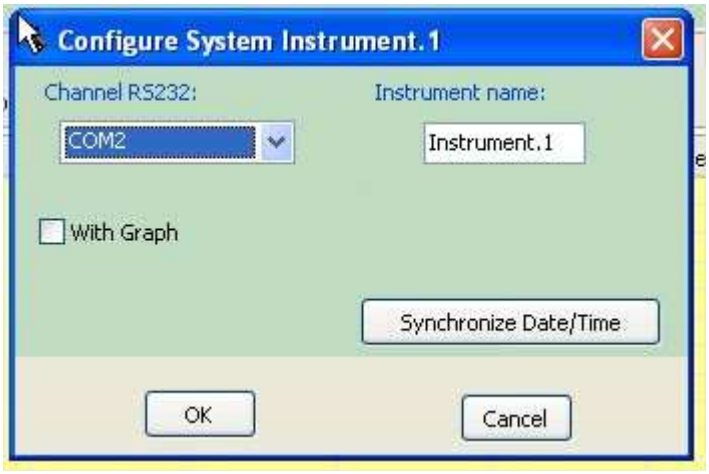
First, the instruments in use must be configured.
Select:
Administration
Instruments
New



A window corresponding to the instrument is opened.

Click over the button  to select the RS 232C channel that will be used for the communication: COM X

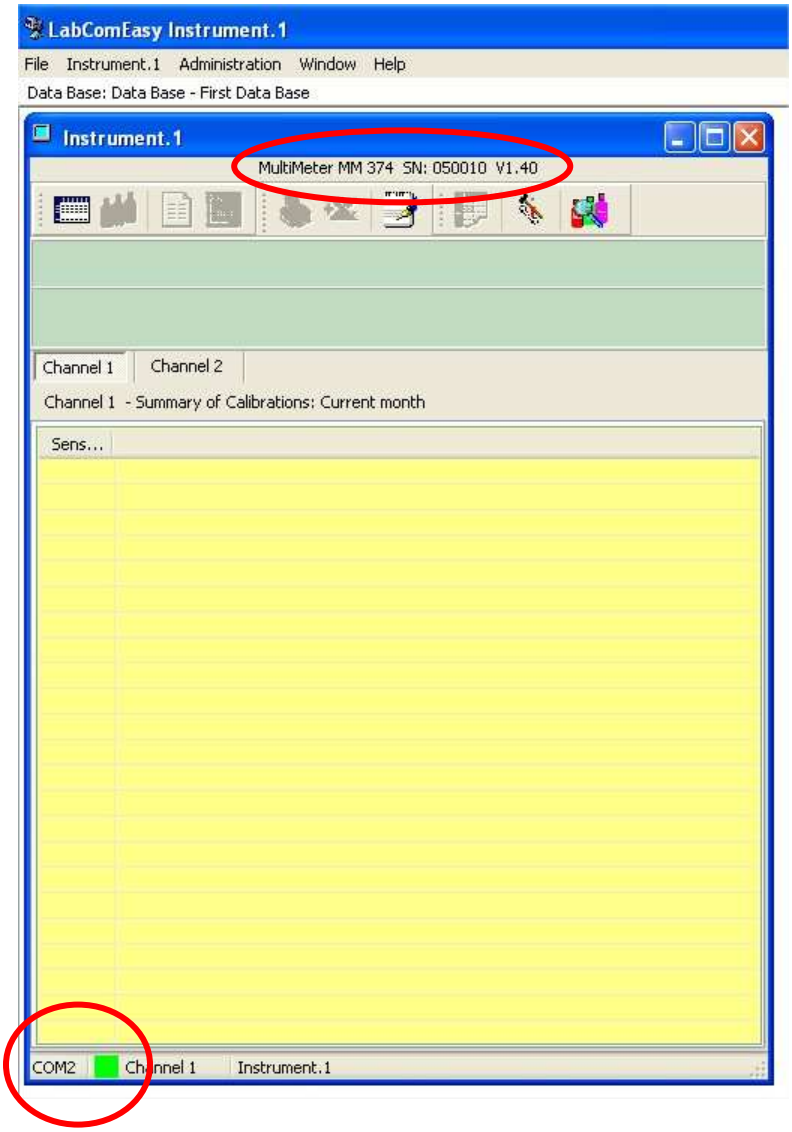




Once the RS 232 channel is established, the user can modify the rest of options:
With graph; Marking this option, the graph "*On Line*" can be seen during measurement.
Instrument name: Instrument.1
Up to 20 characters the instrument can introduce for identification.
Syncronize Date/Hour: The PC sends the date and hour to the connected instruments.

Press OK to save the changes.

The LabCom Easy presents the window of the corresponding instruments.



The instrument model, serial number and software version appear on the header.

The communication port appears on the inferior left corner and the indicator is in green color.

From this moment the LabCom Easy is ready to receive data from the connected instrument.

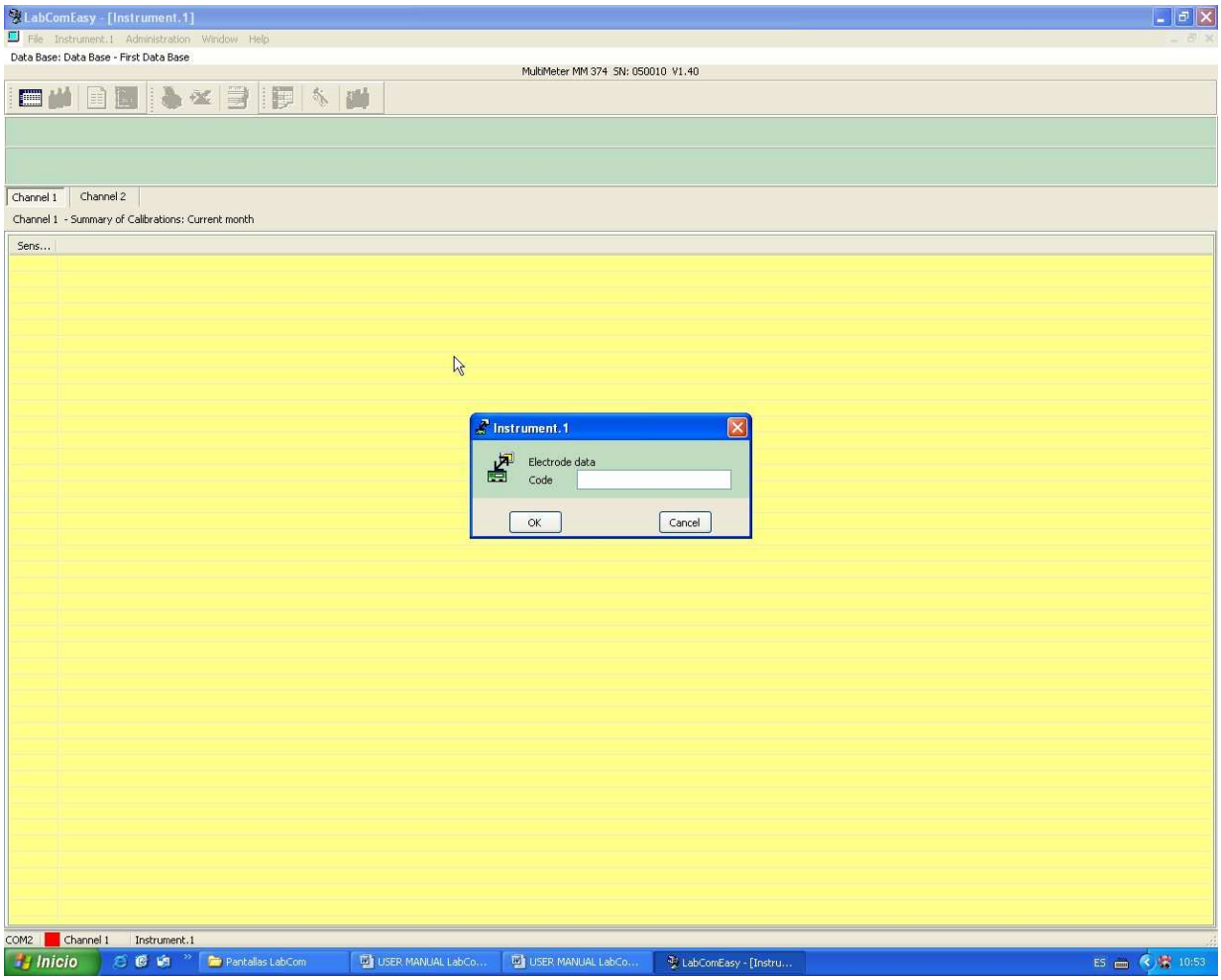
On the instrument window only the daily data will be viewed.

SENSOR IDENTIFICATION

If the user desires, the sensor in use can be identified by code number and serial number. The introduction of these data can be performed from LabCom Easy.

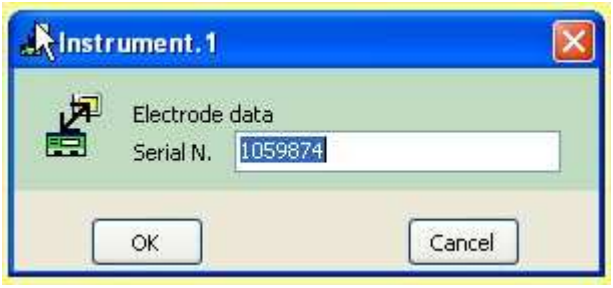
For this purpose, from the main menu of the instrument, go to SYSTEM and select the option “Identify sensor”.

On LabCom Easy the following window appears:



Introduce the data and accept.

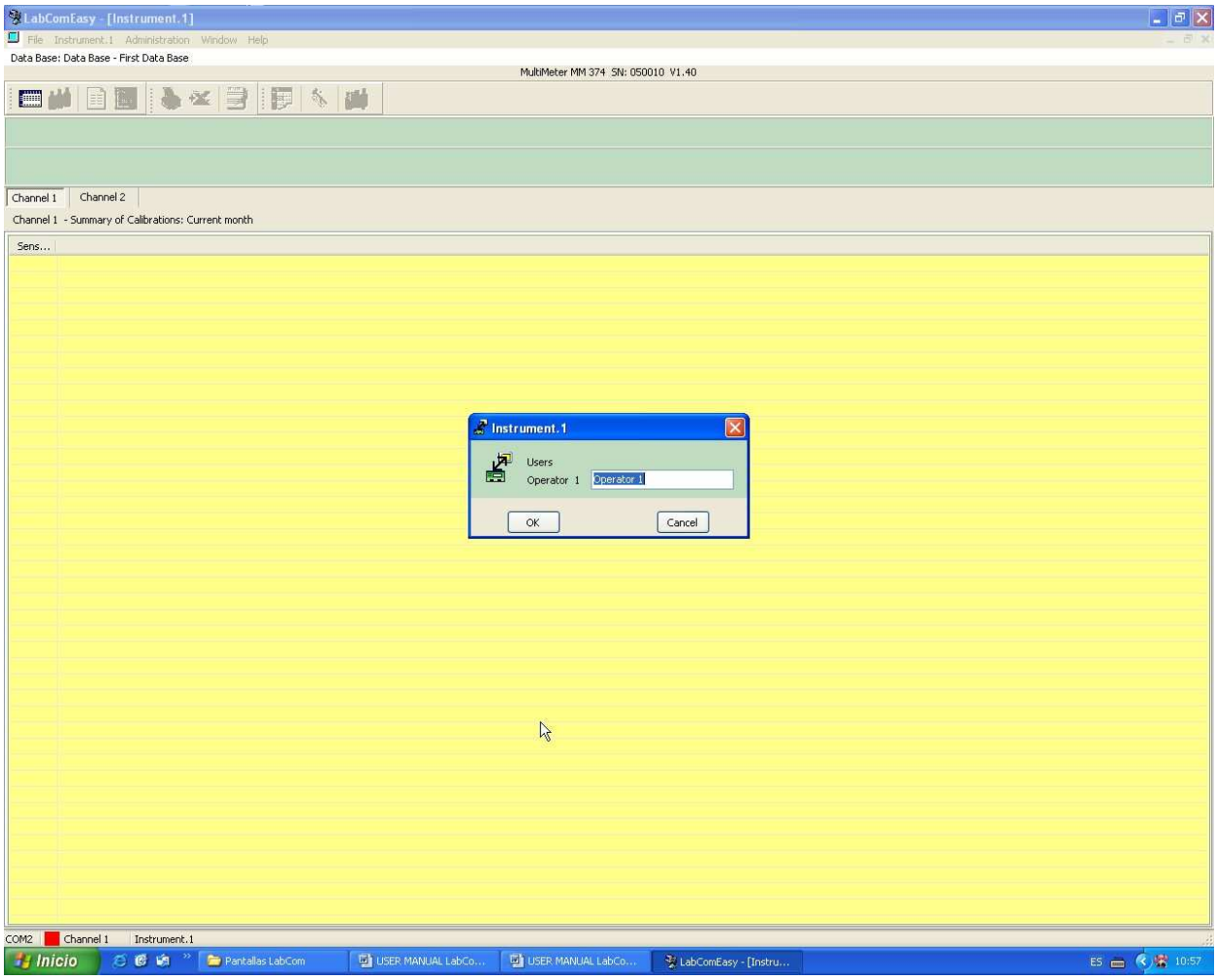
For the serial number, proceed in similar way, introduce the data and accept.



OPERATORS IDENTIFICATION

SensION+ instruments allow the identification of up to 10 operators. The introduction of their names can be done from LabCom Easy.

For this purpose, from the main menu of the instrument, go to SYSTEM, select the option Operators, Operator identification: Yes, Operator 1. When Operator 1 is selected, the following window appears:

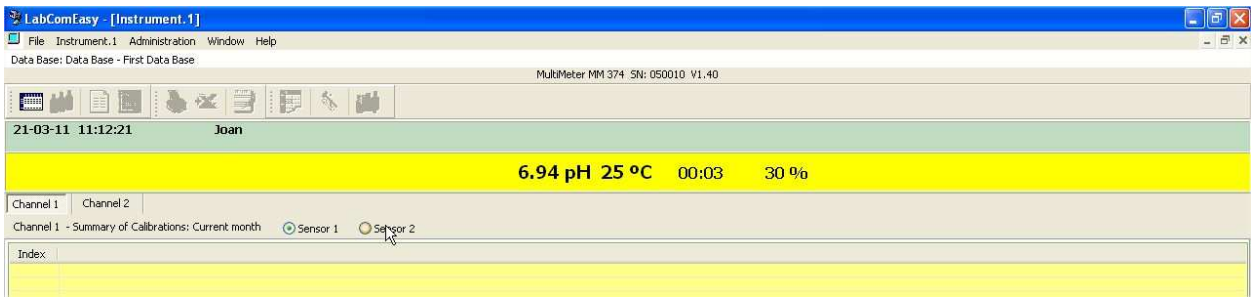


Introduce the desired name and accept.

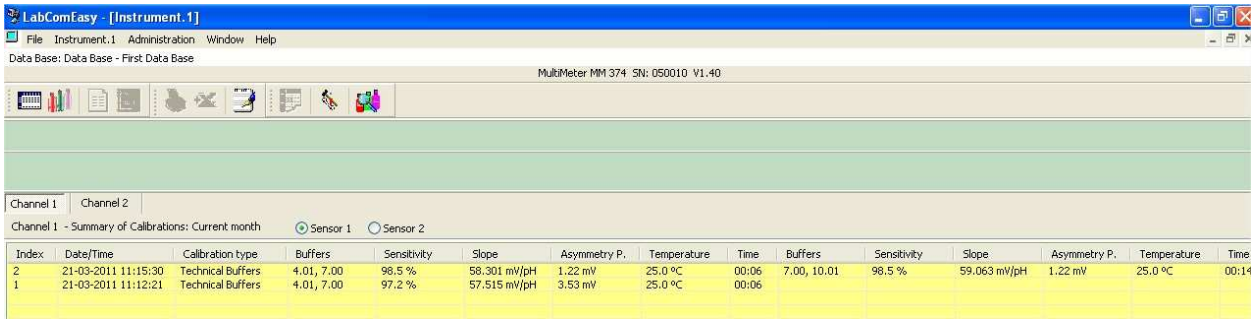
Repeat the same procedure for the name introduction of the rest of operators.

CALIBRATION

Once the calibration from the sensION+ has started, both the LabCom and instrument display the measured value of the standard used.

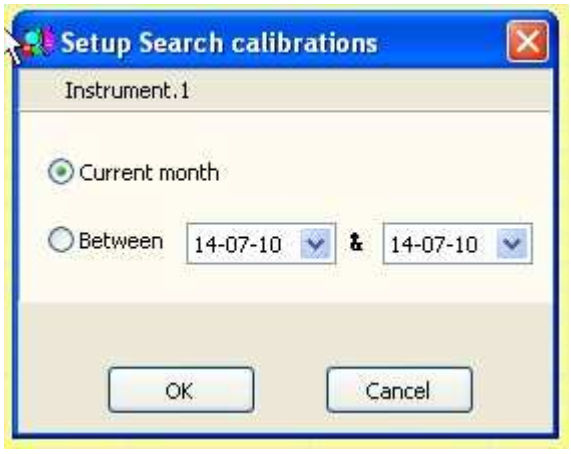


Once the calibration has finished, the obtained calibration data are stored in LabCom Easy.



View the calibration data.

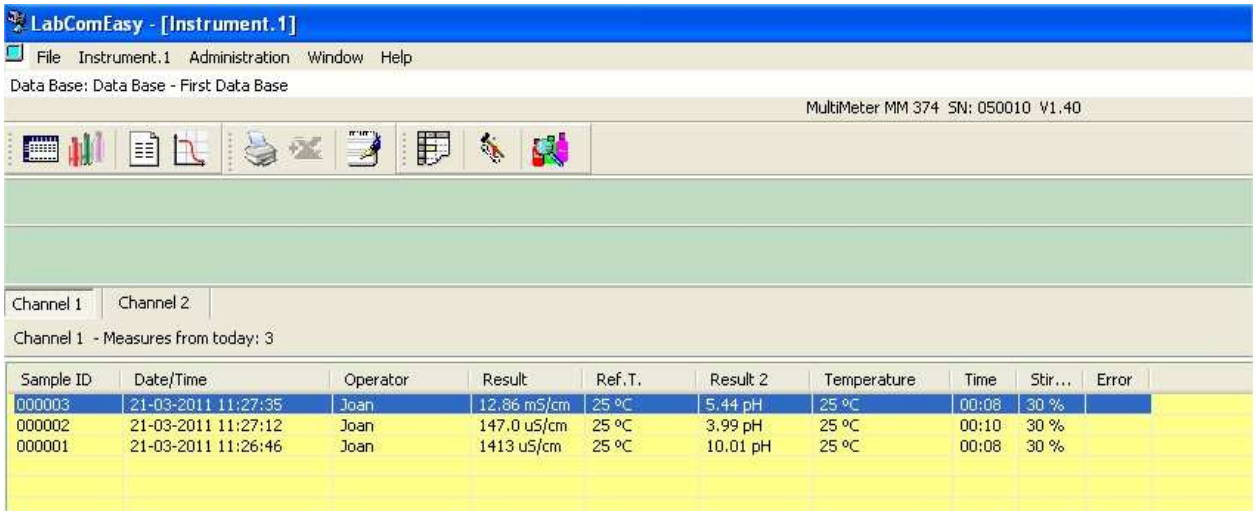
Calibration search by current month or by dates.



MEASUREMENTS

Once the measurement from the sensION+ has started, both the LabCom Easy and the instrument display the measured value.

All measurement results are viewed on the instrument window and they are stored in the Data Base.



View the daily data.

View the calibration data.

View individual report for one or several samples, see page 26.

View the graph of the measurement, see page 36.

Print results, see page 28.

Export to Excel or csv file, see page 37.

Receive data from the Data Logger of the instrument, see page 40.

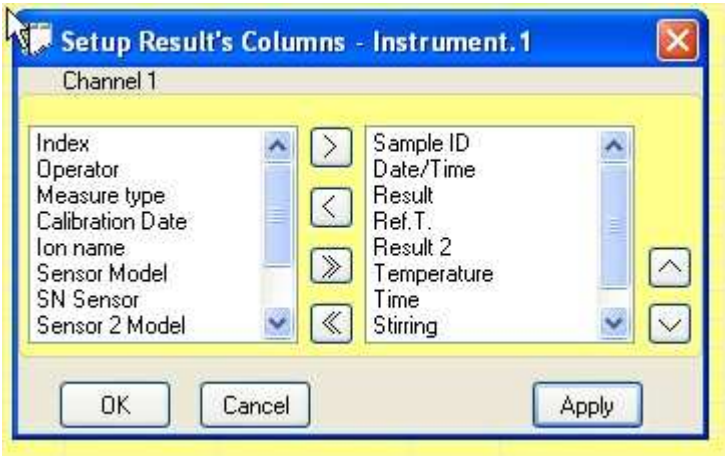
 Configure the results table, see below.

 Set Up, see page 10.

 Search of calibration results, see page 14.

RESULTS TABLE CONFIGURATION 

LabCom Easy allows configuring the Results table on the Instrument window and on the Data Base window.

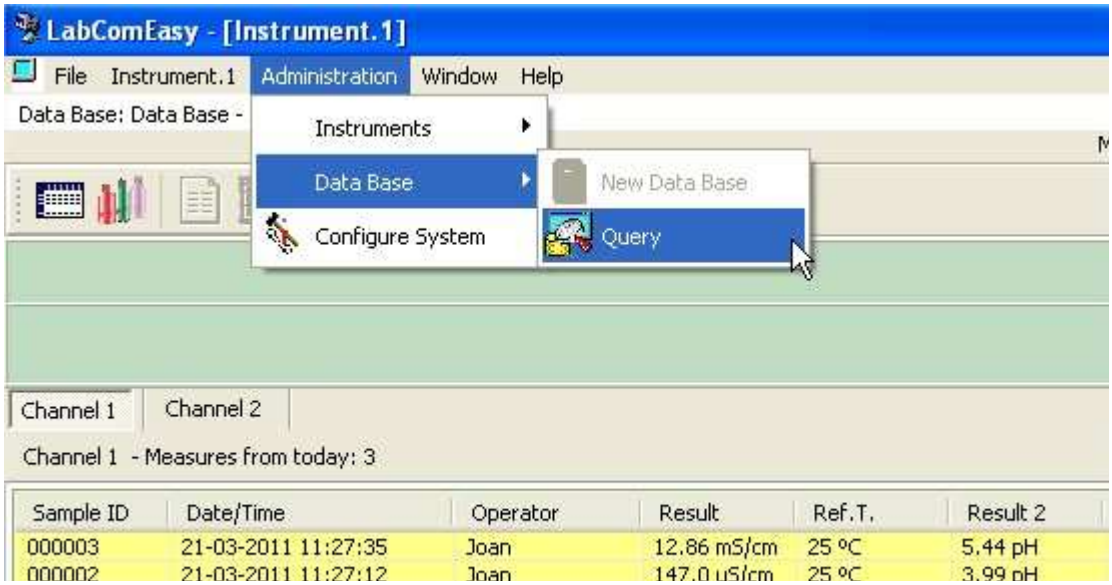


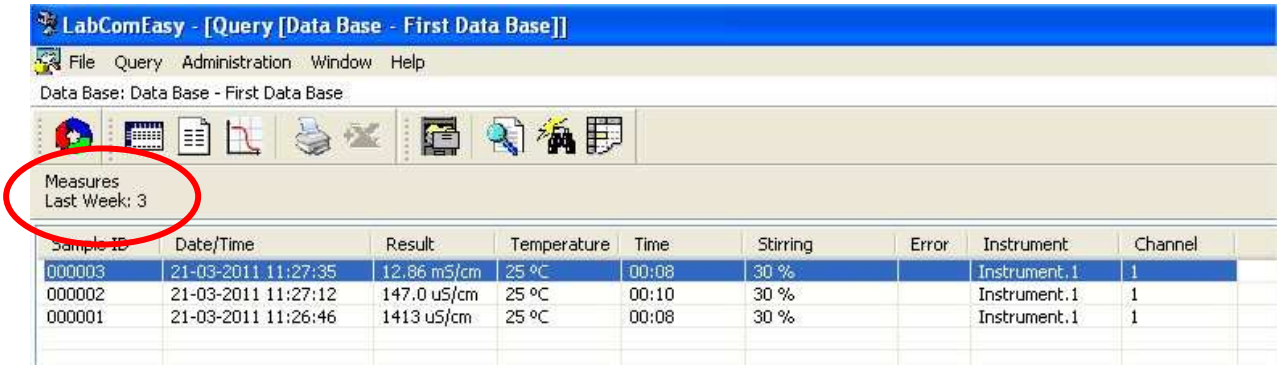
By this option, the user selects the data that appear on the table (columns) and the order of their appearance.
The columns appearing on the table are in the right group and the rest of possible options in the left group.
To add or remove displayed parameters on the table use > or <.
Their order of appearance can be configured as well. Mark the parameter and put it up or down using ∧ or ∨.

Note: It is not possible to configure the data order in the calibration data base.

DATA BASE

From the instrument window only the daily measurements are viewed. To see all the measurements, the user should go to the data base.
The access to the data base is from the main window of the application.





LabCom Easy has by default a search identified as “Last week”.

Possible options:

Update table. To update the table with the last measurements that have been performed.

View table. To view the results table from any other option.

View individual report. To view individual report for one or several samples. See page 26.

View graph. To view the graph corresponding to the measurement. See page 36.

Print. See page 28.

 Data export to Excel or csv file, see page 37.

 Select Data Base, see page 22.

 Modify search, see page 19.

 Configure search, see page 18.

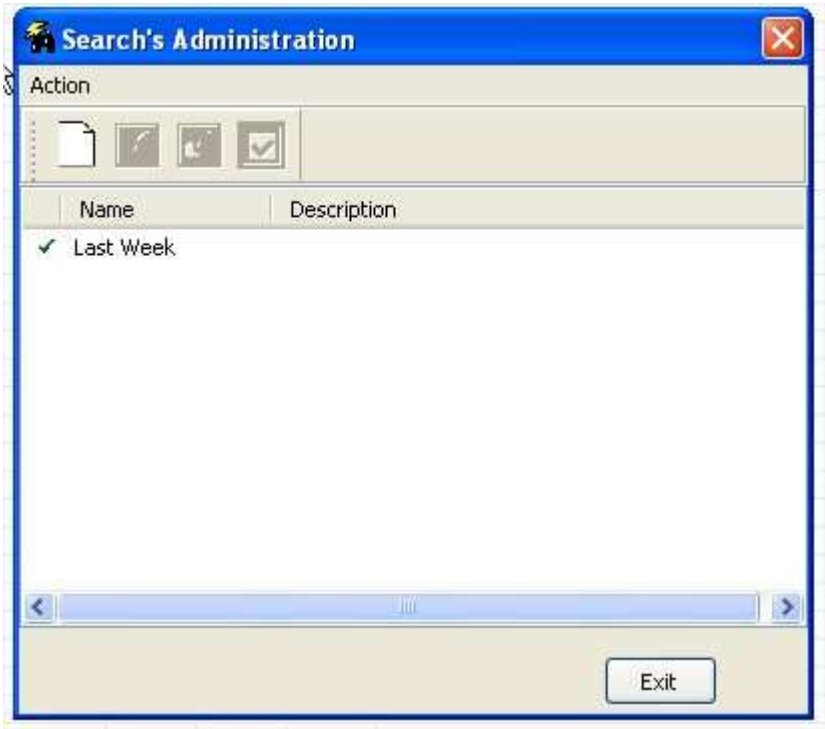
 Configure results table, see page 16.

SEARCH IN THE DATA BASE

By the search, different criteria can be established for data searching. These criteria are stored and be re-used at any moment.

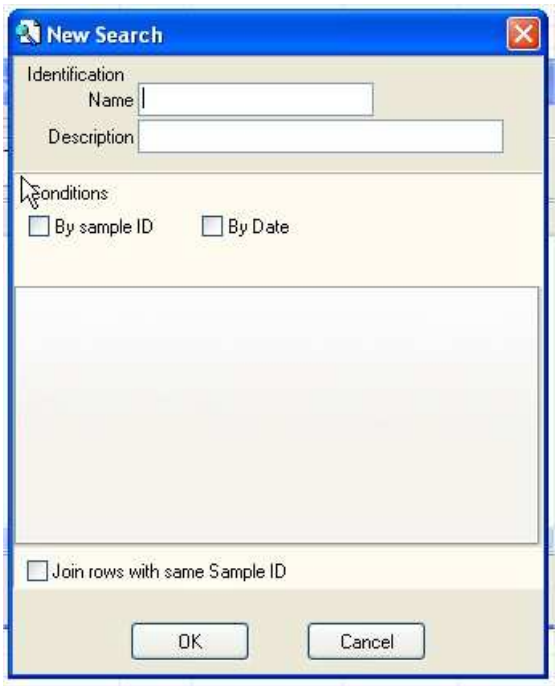
Search administration: 

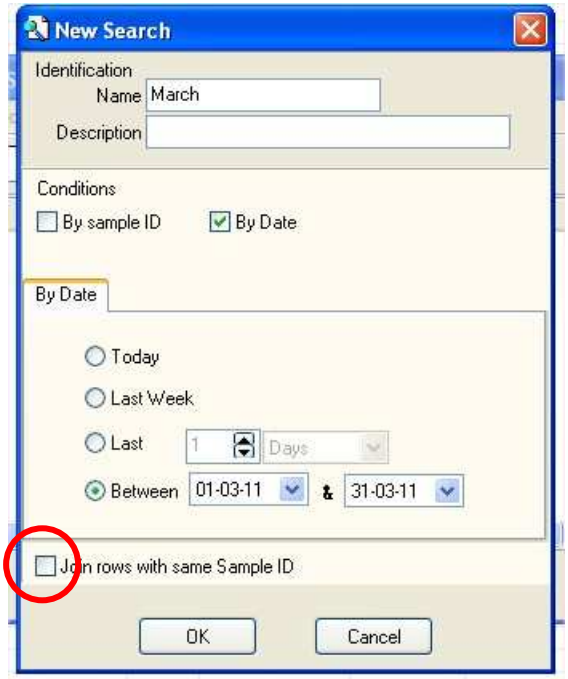
It allows establishing searching criteria (filters) in accordance with the conditions defined by the user, for example from the last week, last month, etc. By default there is a search called “Last week”. When a new search is created, the user should introduce its identification name (obligatory) and description (optional).

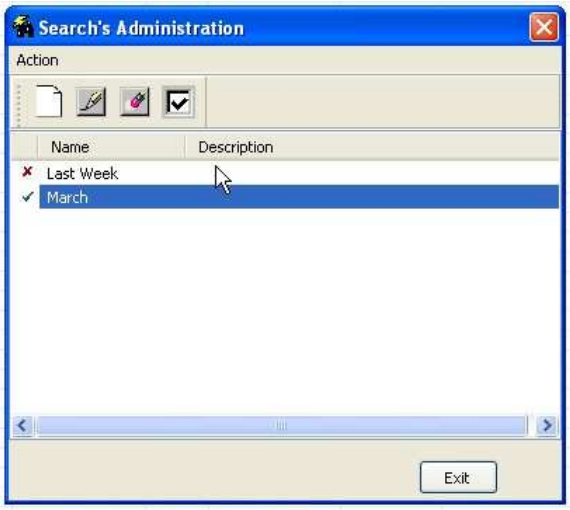


 Create a new search

The search of measuring data can be carried out by sample ID or by date.
If the option “Join rows with the same sample ID” in the same row there will be all data related to the same sample ID (this option is useful when several instruments are connected, for example pH-meter and conductivity meter and the sample ID is manual).







Options:


Create new search

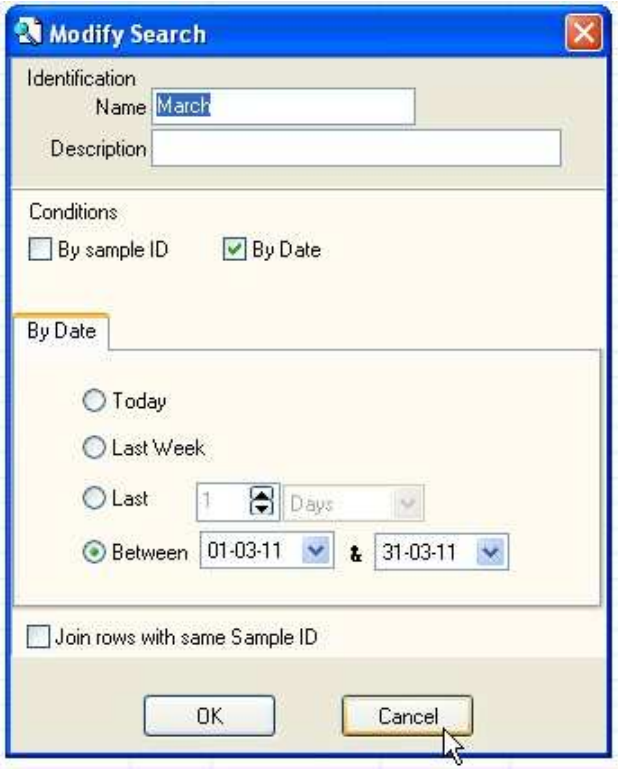

Modify the searching conditions


Erase the search


Activate the search

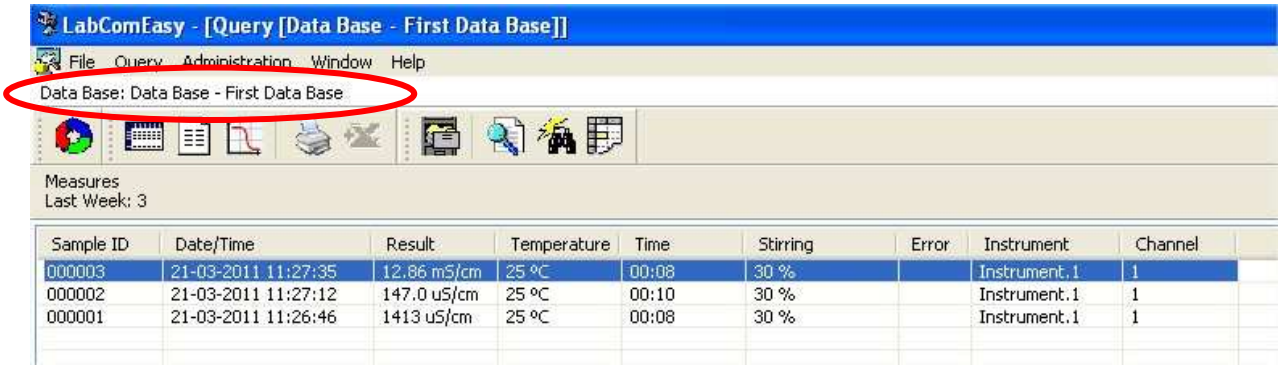
MODIFY THE SEARCH

The searching conditions can be modified.



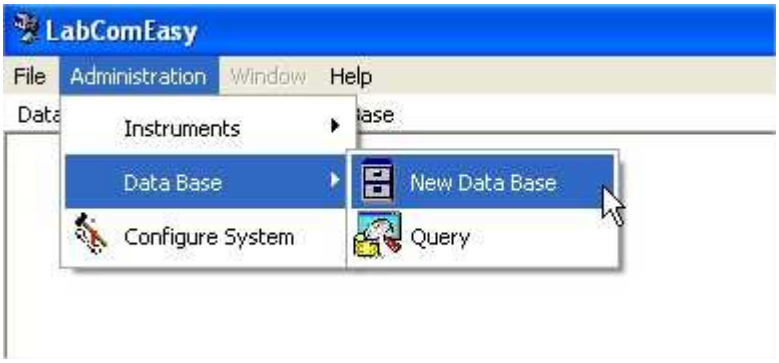
NEW DATA BASE

The program LabCom Easy by default creates a Data Base called First Data Base.



Due to security reasons or when the data base has a great number of measuring results, it is recommended to open a new data base to make data management easier. The previous data base can be open at any moment for viewing the store data.

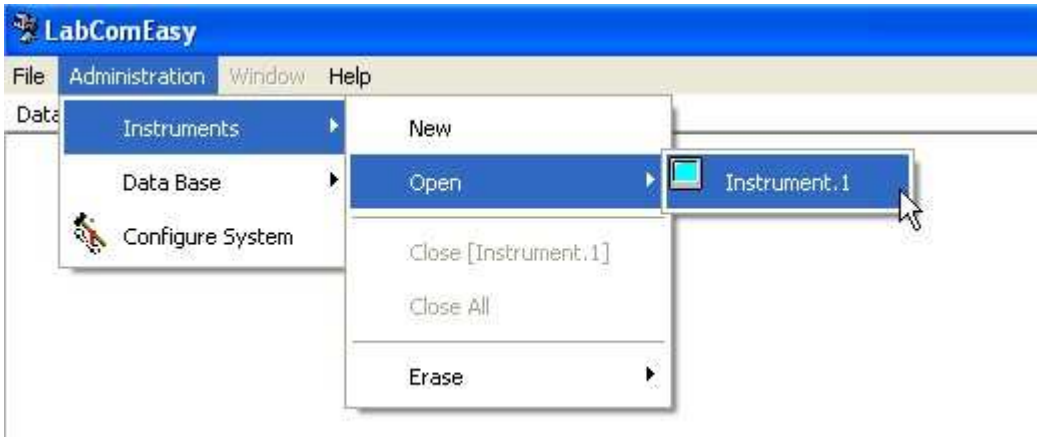
To open a new Data Base, first, the window(s) of the instrument(s) and the Query must be closed. After that, go to Administration, Data Base, New Data Base.

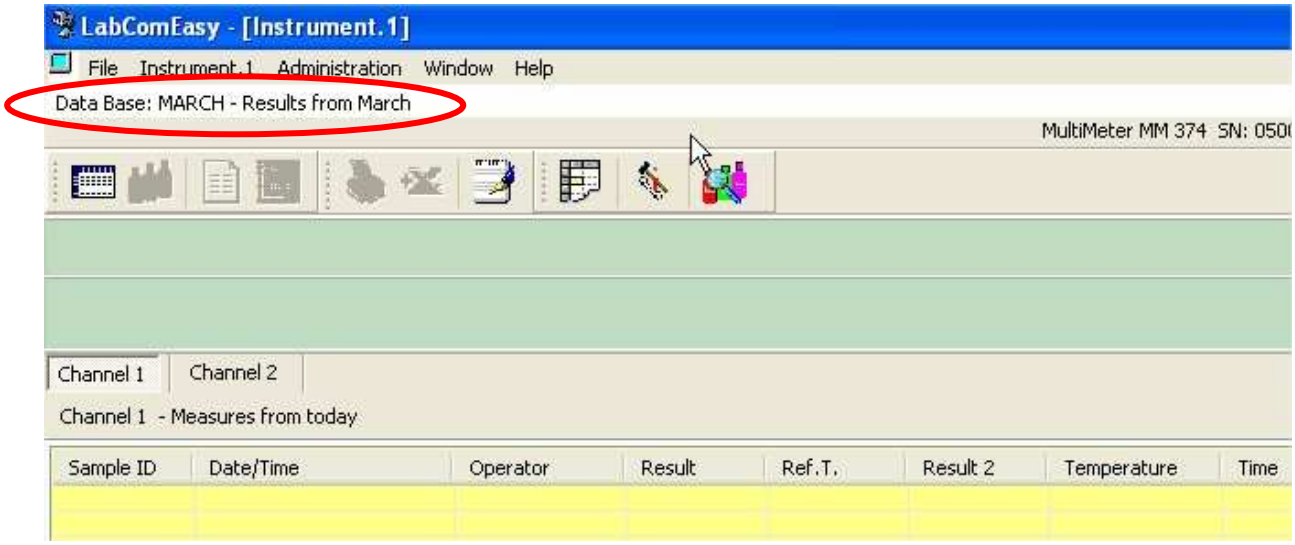


There will be a window for identifying the new data base.

When the introduced data are accepted, a new data base is created.

The instrument in use must be open, Administration – Instrument – Open.

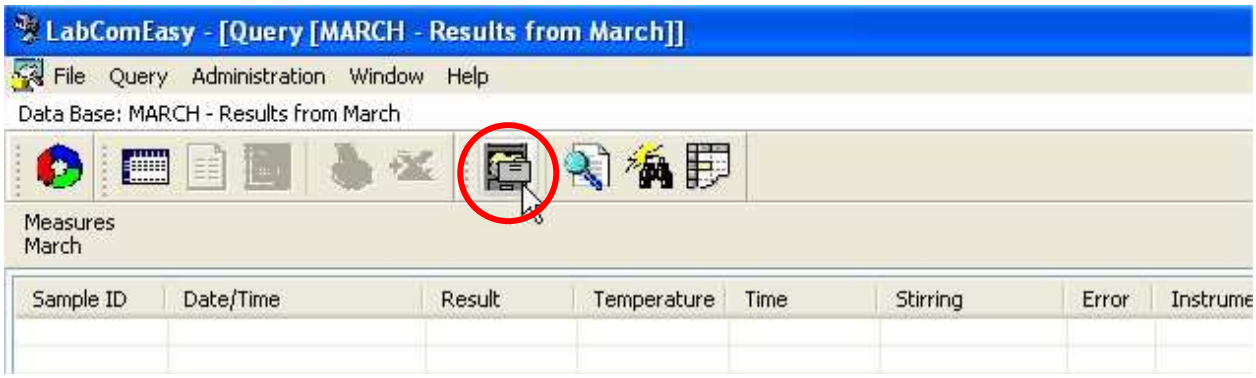




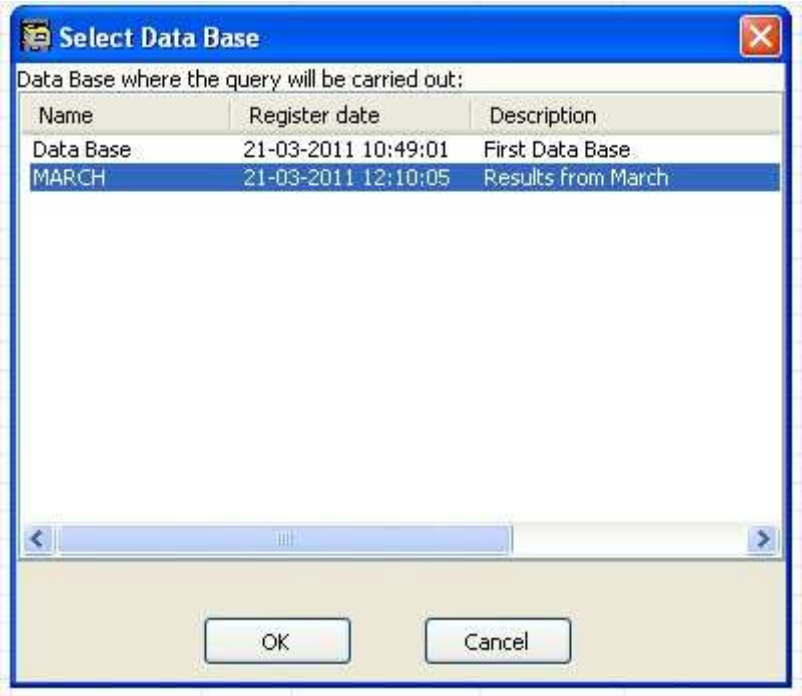
The data will be stored in the new data base.

If automatic sampe ID is used, the first ID in the new data base will be the next of the last ID sample measurement in the previous data base.

The measuring data will be stored always in the new data base (that has been created last). While the measurements in the previous data bases can be viewed at any moment. From the window of Query, click on the indicated button.



Select the Data Base where the query will be done.



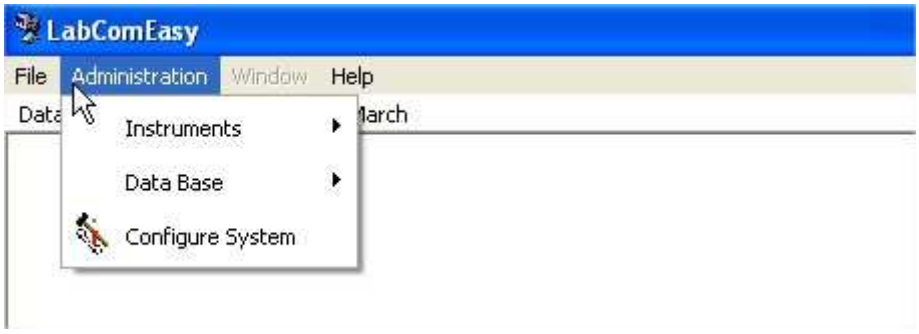
MANAGEMENT OF THE DIFFERENT WINDOWS

MAIN WINDOW:

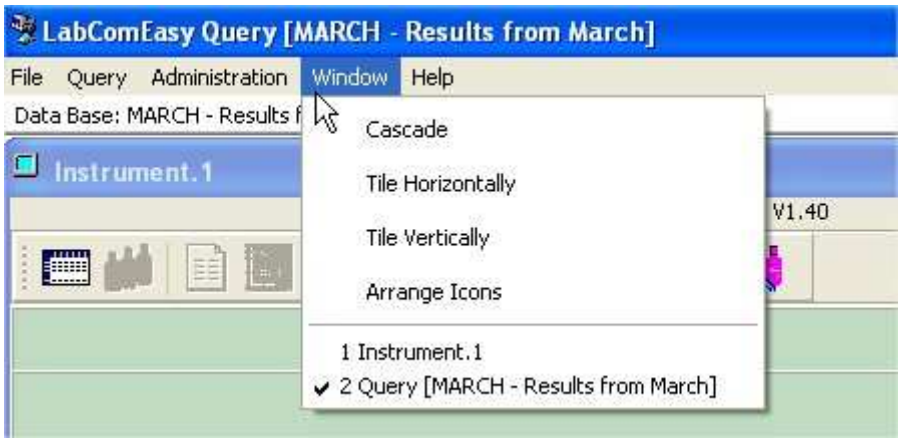
The options on the menu bar before opening any instrument are:

File: To quit the application

Administration: Instrument management, for opening a new instrument, for closing or erasing an instrument.
Data base, for opening the data base and generate different queries.
Configure system, introduction of 2-line report header.



Window: This option is active when there is at least one instrument open. The user can select the view of the different Windows.



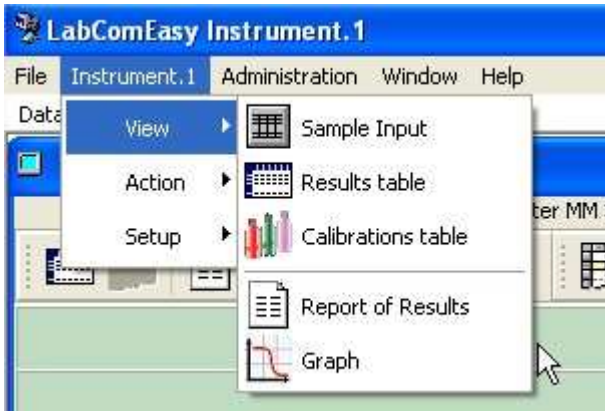
Help: Here the version of LabCom Easy and the contact details can be found.

INSTRUMENT WINDOW

File: To close the instrument window.

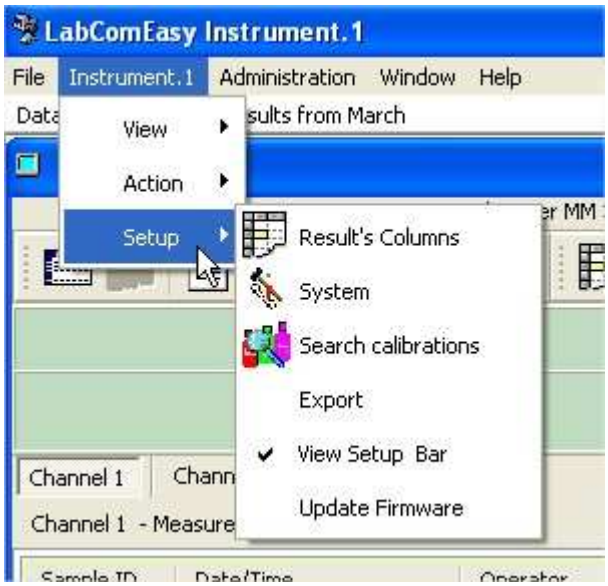
Instrument 1:

View:



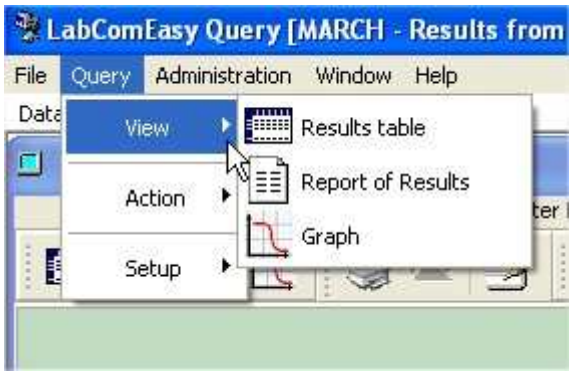
Action:

Setup:

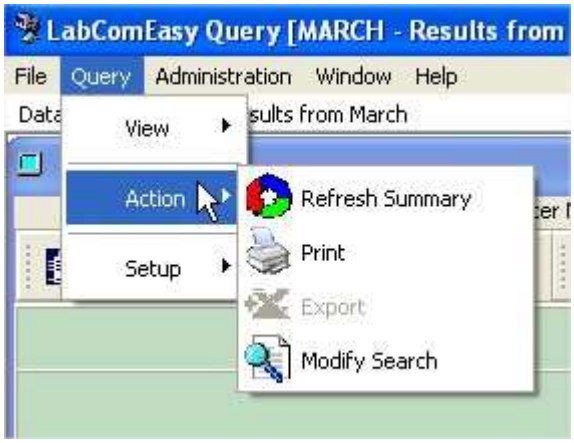


DATA BASE WINDOW:

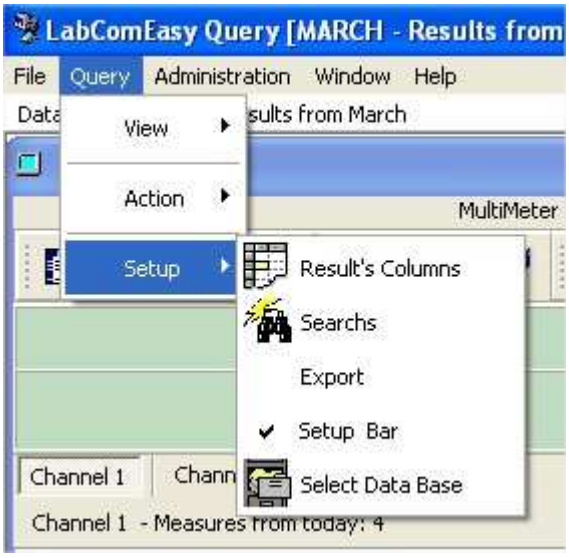
View:



Action:



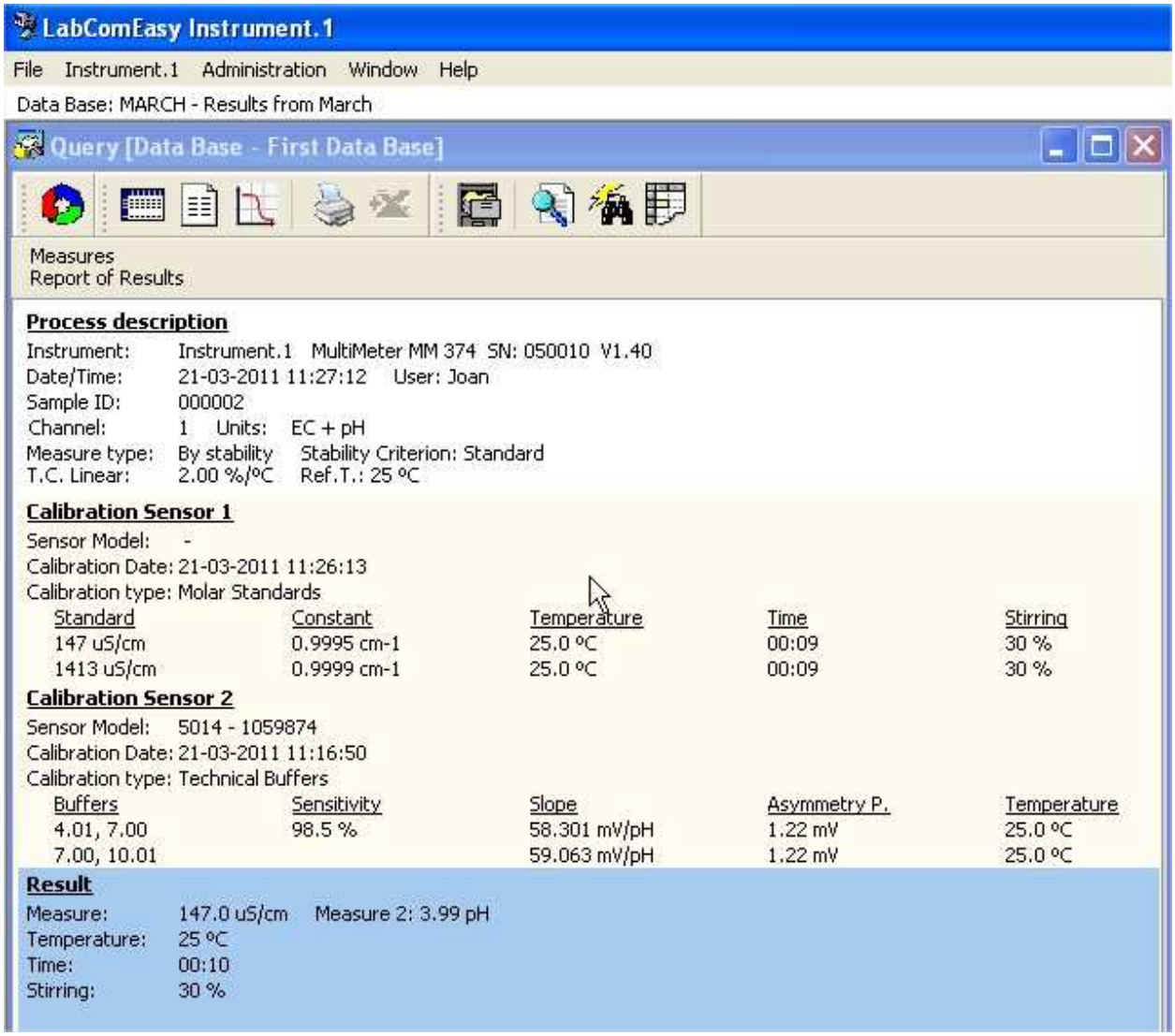
Setup:



REPORTS VIEW

To view all data related with one measurement, mark the measurement in the window of the Data Base or in the window of the instrument (daily data) and click on 

All data related to the measurement appear on the display.

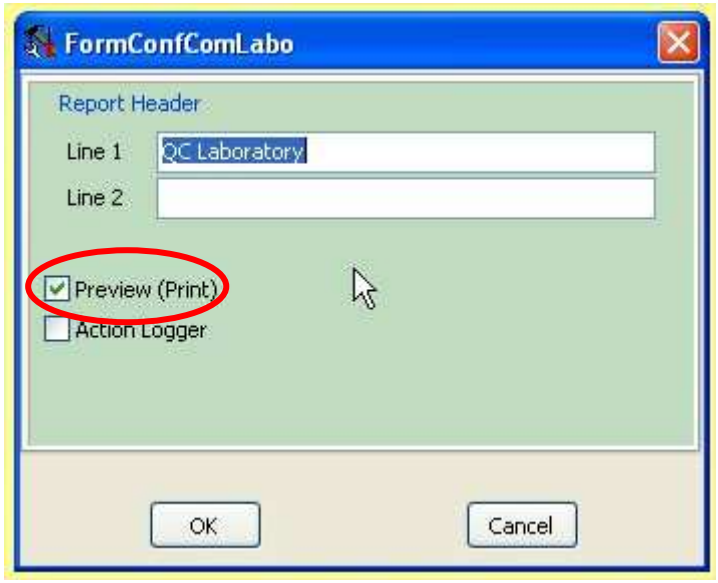


From this window, the graph can be seen, the report can be printed or exported to Excel (if the data export is activated) or the user can go back to the Data Table.

PRINT REPORTS

From LabCom Easy the reports can be reduced, with graph, with all measuring points and a resume of several results.
The report can include a header of two lines introduced by the user. For their introduction, go to "Administration", "Setup System".

The following window appears:



Introduce the two lines as header report and accept with OK.

Preview: If this option is selected there will be a preview before printing.

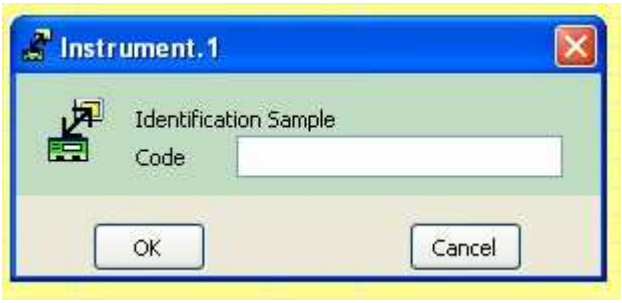
Reduced report. Select the result to be printed and click "Print".
Results summary. Select several results and click "Print".
Complete report. Click "Print" with the complete report or the graph on the display.

SAMPLE IDENTIFICATION

The type of sample identification can be selected from the main menu of the connected instrument, going to the option “SYSTEM”, “Sample ID”, “Automatic” or “Manual”.
Sample ID
- Automatic: The ID is numeric, increasing and automatic.
- Manual: The user introduces the ID of each sample (maximum 25 characters).

MANUAL SAMPLE ID, SAMPLE BY SAMPLE

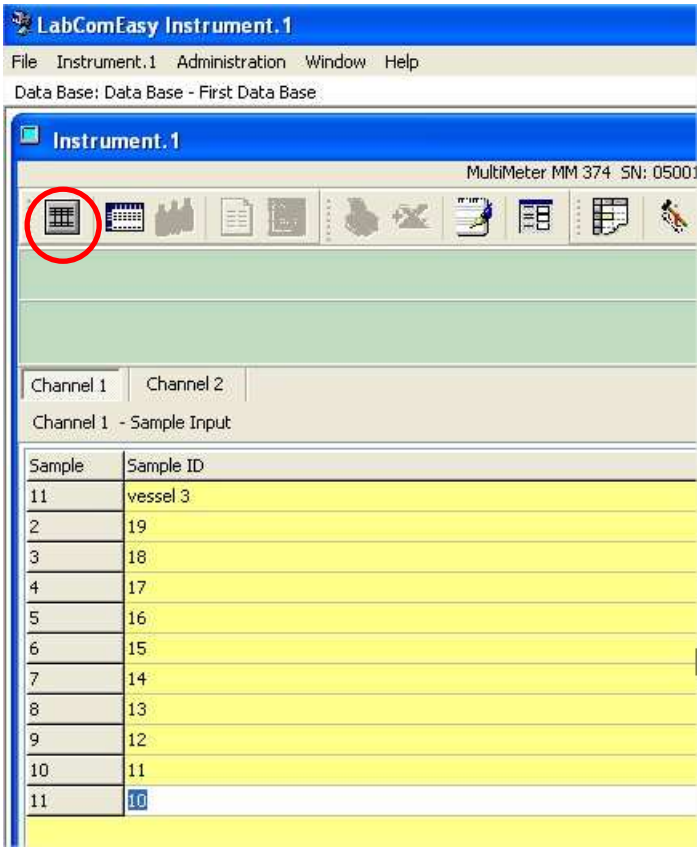
When starting the measurement, a window for sample ID introduction appears on the PC:



Introduce the ID and accept with OK.
The introduced ID is sent automatically from the PC to the sensION+.

MANUAL SAMPLE ID FOR GROUP OF SAMPLES

When the Manual Sample ID is activated, the button “Sample entrance” on the instrument’s window is also activated. Click on it, to introduce the ID of one sample or of a group (series) of samples.

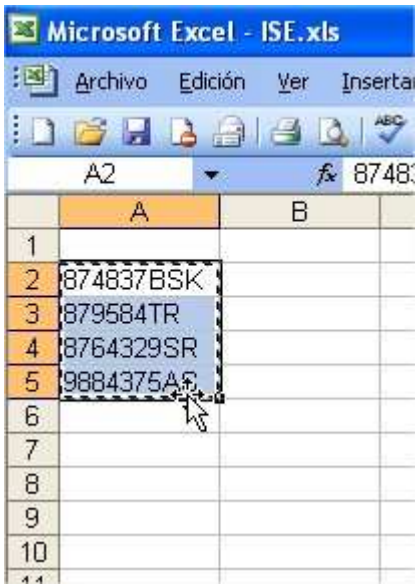


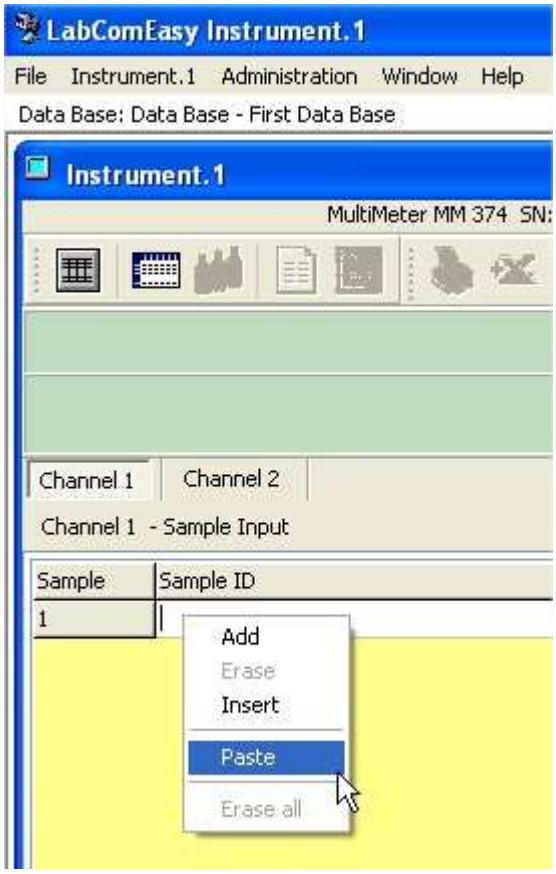
Introduce the list of sample ID that will be measured.
Start the measurement from the sensION+ menu.
The samples measurements must be performed in the same order as the ID was introduced.
Once the measurement has finished, the ID will disappear from the introduced list.

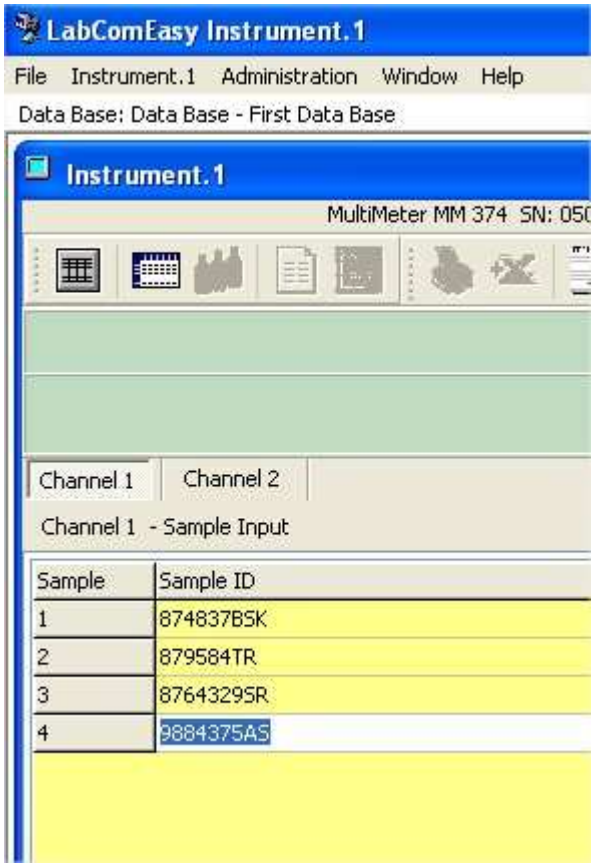
If the right button of the mouse is pressed, it is possible to:
- add
- erase
- insert sample ID
- erase all ID from the list

SAMPLE ID INPUT USING THE FUNCTION COPY & PASTE

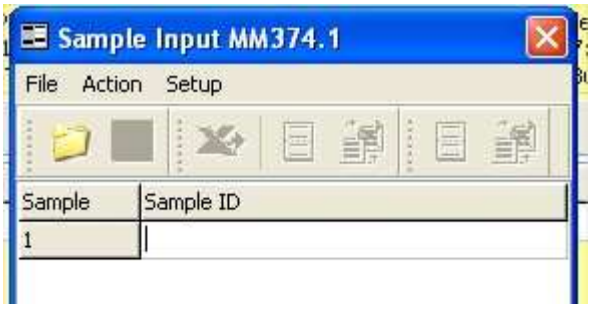
The sample ID placed in a column can be copied from any file (Note Pad, Word, Excel, csv file) and pasted in the LabCom Easy.



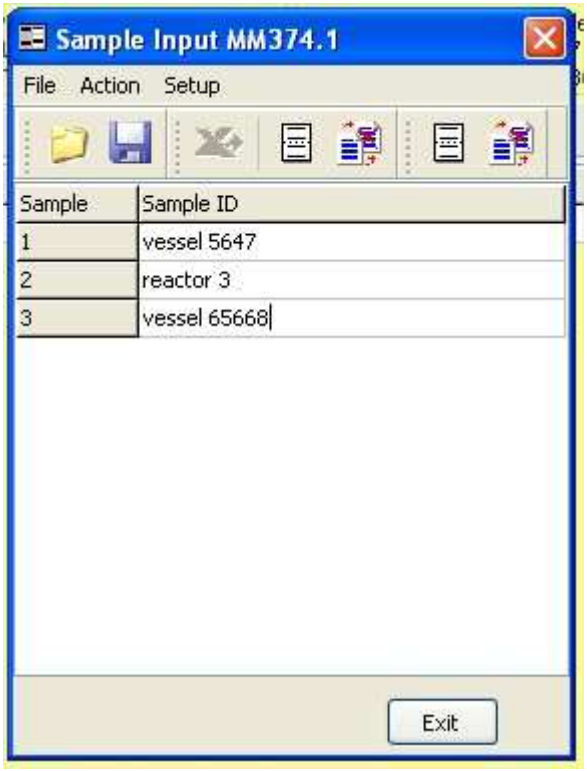




SAMPLE ID INPUT FROM A FILE STORED IN LabCom Easy

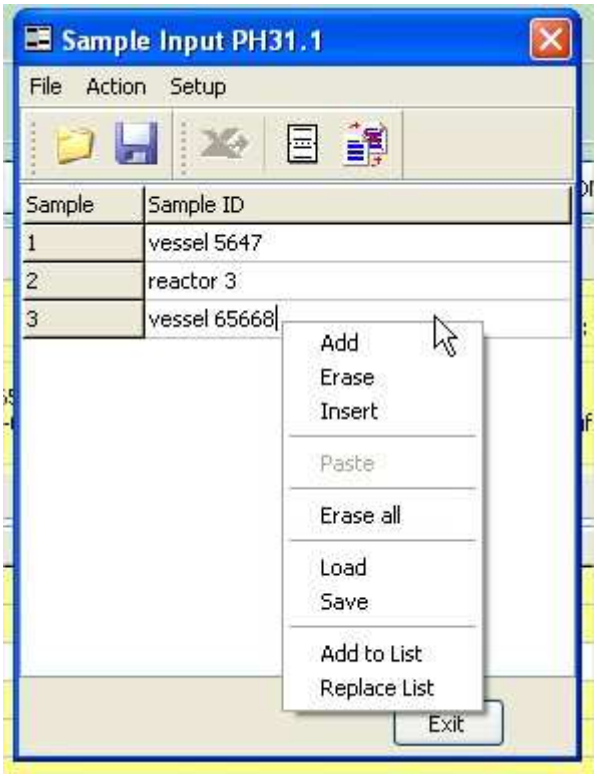


With this option a file can be generated with a series of ID, for example samples measured often. Therefore, the ID is introduced every time when measure is avoided.
It is possible to have only one list of sample ID per instrument or per channel in the instrument (MM340 and MM374).



Possibilities of the different buttons (from left to right):

- Load sample ID 
- Save list of sample ID 
- Add to list. In two channel instruments the user can select the measuring channel. 
- Replace list. In two channel instruments the user can select the measuring channel. 

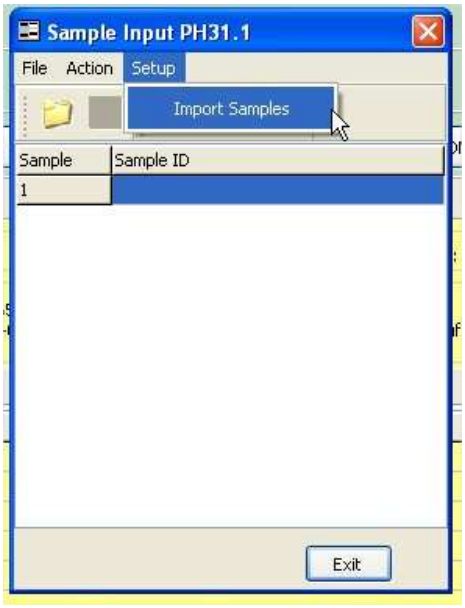


The same options will appear if the right button of the mouse is pressed over one of the sample ID's.

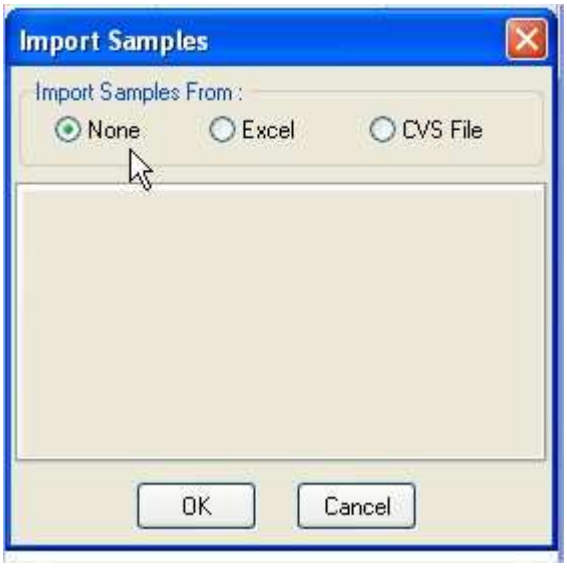
SAMPLE ID INPUT FROM EXCEL FILE

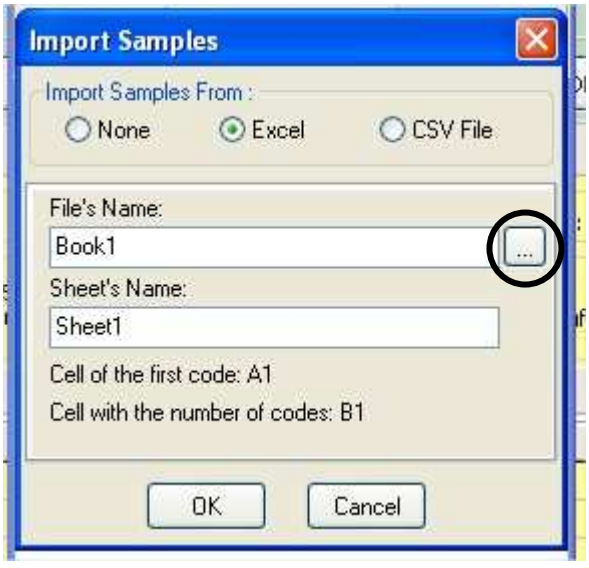
The software LabCom Easy allows importing sample ID from Excel file.
To do this, the procedure is:
- Click on the button 

- Click on Setup. Select “Import Samples”.



- A new window will appear. Select “Import Samples From: Excel”. From the marked button the user can look for the Excel file containing the sample ID.

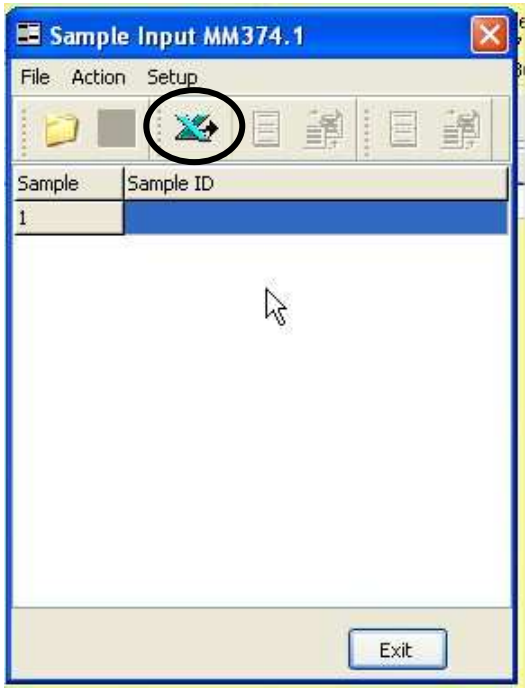


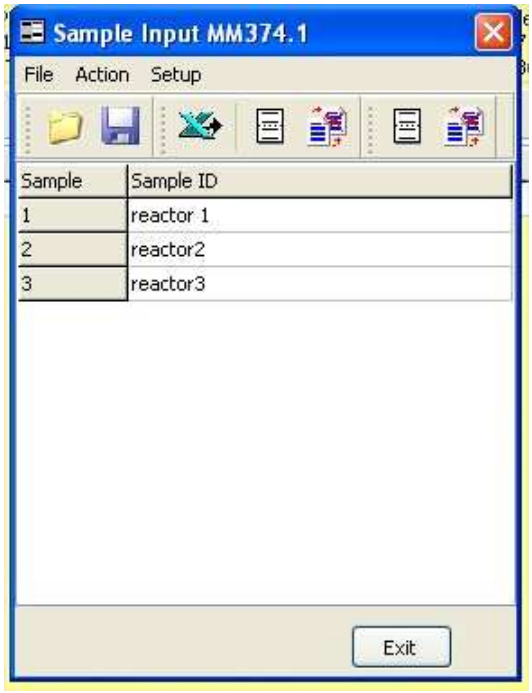


Using the button  select the file where the data will be imported from.

Important: In the Excel file the sample ID must be placed in a column. The first exported ID must be in the cell A1.
The number of ID exported to LabCom Easy must be indicated in cell B1 and the cursor must be placed in another different cell.

- After activating the “Sample Import”, the Excel button is activated.





Pressing on the button  the selected sample ID is imported.

Now they should be sent to the instrument. The sample ID can be sent:

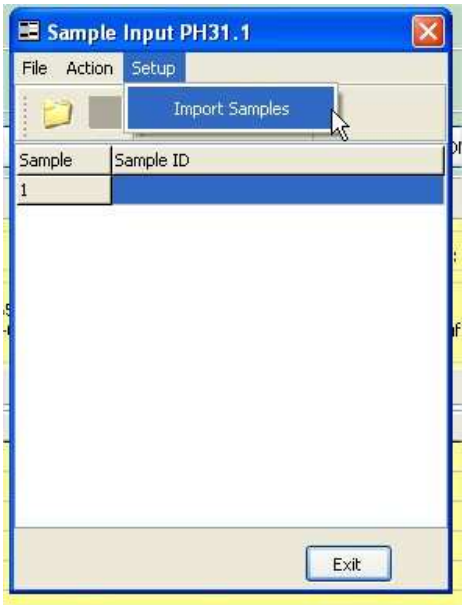
- to replace the instrument ID list 

- to add to the instrument ID list 

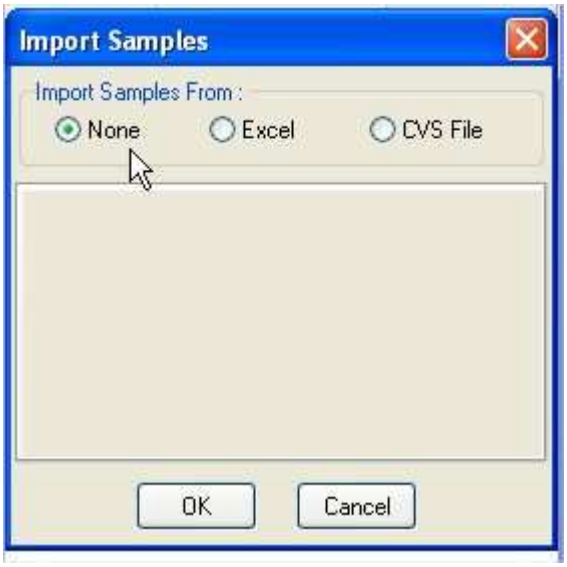
SAMPLE ID INPUT FROM CSV FILE

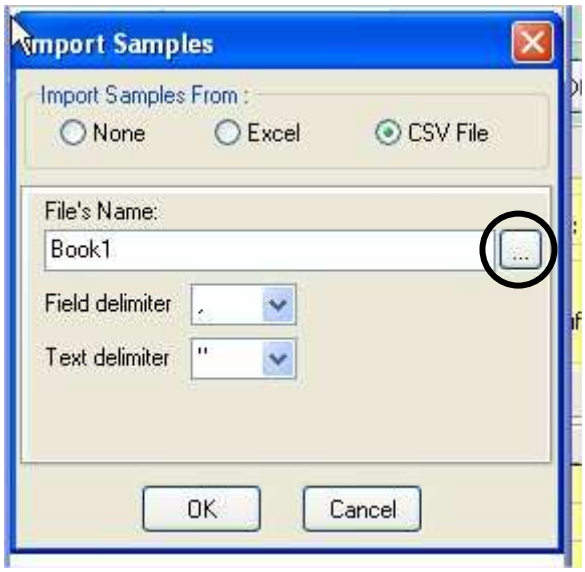
The software LabCom Easy allows importing sample ID from csv file.
To do this, the procedure is:
- Click on the button 

- Click on Setup. Select “Import Samples”.



- A new window will appear. Select “Import Samples From: CSV File”. From the marked button the user can look for the csv file containing the sample ID.

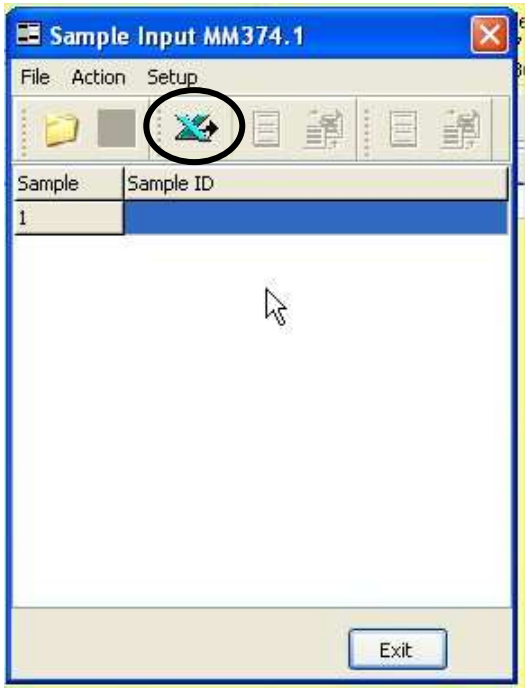


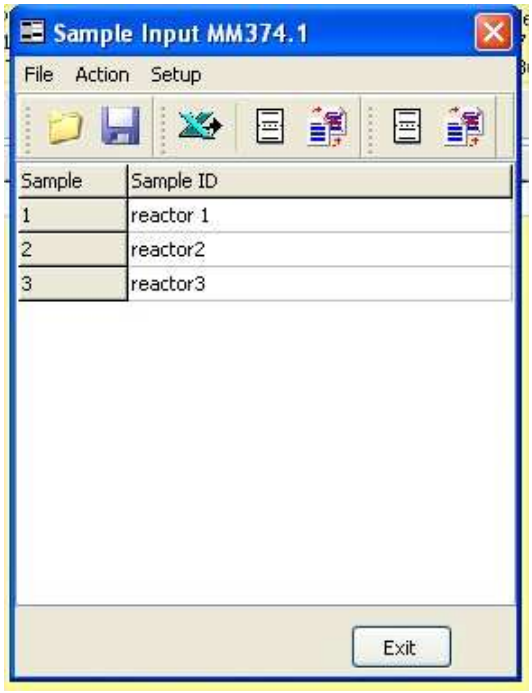


Using the button  select the file where the data will be imported from.

Important: The user must select the field delimiter and the text delimiter used in the csv file containing the sample ID.

- After activating the “Sample Import”, the Excel button is activated.





Pressing on the button  the selected sample ID is imported.

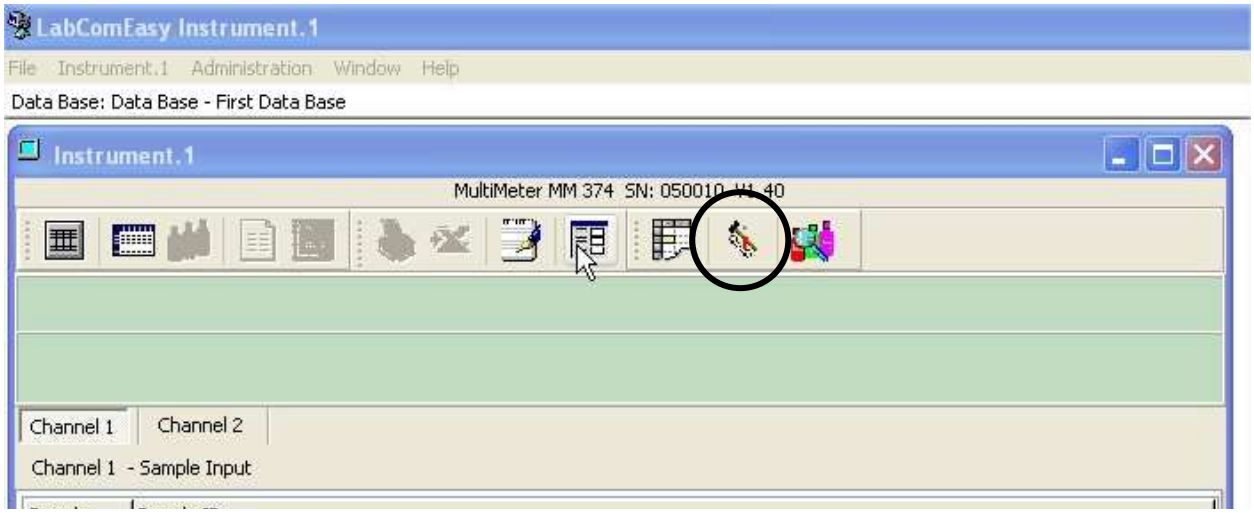
Now they should be sent to the instrument. The sample ID can be sent:

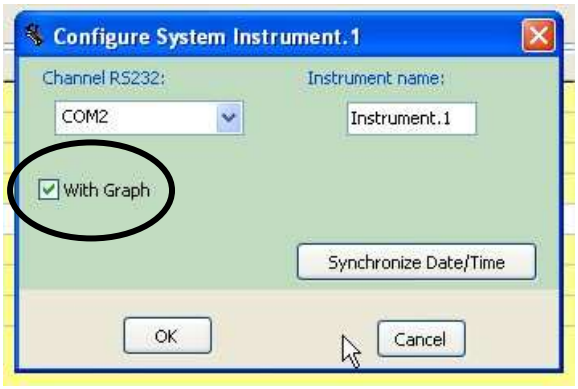
- to replace the instrument ID list 

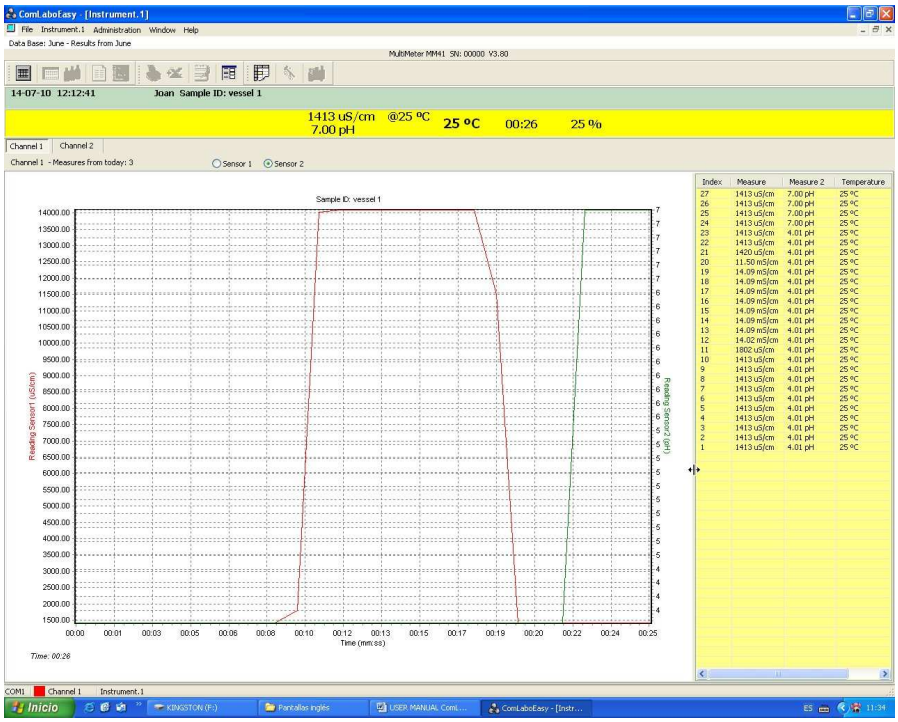
- to add to the instrument ID list 

MEASUREMENTS WITH GRAPH "ON LINE"

Using LabCom Easy, the user can obtain the graph "On Line" from the measurement. For this purpose, when start the program, select the option "With Graph" in "Configure", see Instrument configuration, page 10 or at any moment click over the button "Configure" from the tool bar of the instrument window.



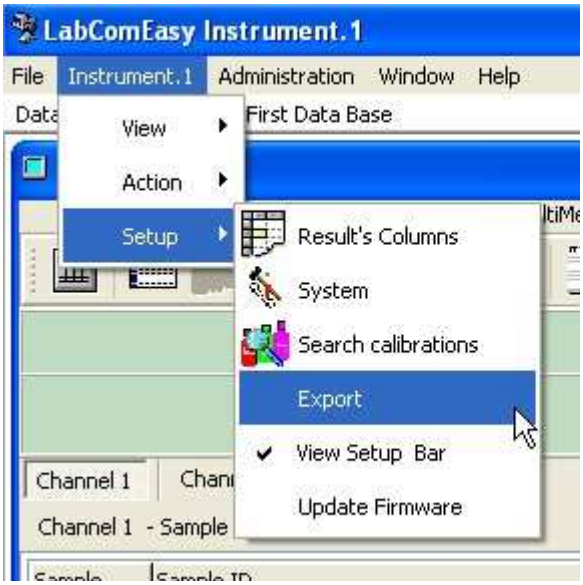


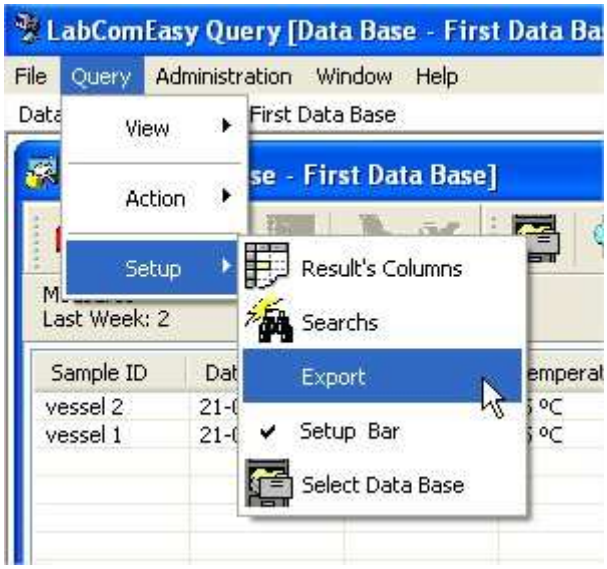


Once the measurement has finished, the results and the graph are stored in the data base and can be viewed at any moment from the window of the instrument or from window of the Data Base.
Select the result and click on 

DATA EXPORT

Data Export to Excel. All stored data can be exported to Excel. For this purpose, the data export should be activated in the window of the instrument (if the data export will be done from there) and in the data base (if the data export will be done from the Query). Select Setup/Export.





On this display select the option “Export Results To Excel”

Select the Excel file where the data will be exported. Using the button  select the file where the data will be imported from.

Once the option “Export Results to Excel”” is activated there are several options:
1- Export one result. From the daily data table or from the data base.
Just mark the result and click over 

2- Export several results. Mark the different results in the daily data table or in the data base and click over 

3- Export all points of one result from measurement in continuous or by time and with graph.
Mark the result and view the graph or the complete result. Click over 

Note: The exported information occupies only the necessary cells After data export, the rest of existing data in the Excel sheet will be maintained.

Example for data exported to Excel:

Microsoft Excel - Hoja4.xls

Archivo Edición Ver Insertar Formato Herramientas Datos Ventana ?

I19

	A	B	C	D	E	F	G	H	I
1	HACH LabComEasy V2.0								
2	Report of Results	24-03-2011 15:32:17							
3	Process description								
4	Instrument:	MultiMeter MM 374 SN: 050010 V1.40 Instrument.1							
5	Date/Time:	21-03-2011 16:10:37							
6	Operator:	Joan							
7	Sample ID:	vessel 1							
8	Channel:	1	Units:	EC + pH					
9	Measure type:	By stability	Stability Criterior	Standard					
10	T.C. Linear:	2.00 %/ºC	Ref.T.:	25 ºC					
11	Calibration								
12	Sensor 1:	-							
13	Calibration Date:	21-03-2011 11:26:13							
14	Calibration type:	Molar Standards							
15	Standard	Constant	Temperature	Time	Stirring				
16	147 uS/cm	0.9995 cm-1	25.0 ºC	0:09	30%				
17	1413 uS/cm	0.9999 cm-1	25.0 ºC	0:09	30%				
18	Sensor 2:	5014 - 1059874							
19	Calibration Date:	21-03-2011 11:16:50							
20	Calibration type:	Technical Buffers							
21	Buffers	Sensitivity	Slope	Asymmetry P	Temperature	Time	Stirring		
22	4.01, 7.00	98.50%	58.301 mV/pH	1.22 mV	25.0 ºC	0:06	30		
23	7.00, 10.01	98.50%	59.063 mV/pH	1.22 mV	25.0 ºC	0:14	30		
24	Result								
25		Measure	Measure 2	Time	Stirring				
26		12.86 mS/cm	5.44 pH	0:08	30%				
27	List of Points								
28		Index	Measure		Measure 2		Temperature		Time
29		1	12.86	mS/cm	5.44	pH	25	ºC	0:00
30		2	12.86	mS/cm	5.44	pH	25	ºC	0:01
31		3	12.86	mS/cm	5.44	pH	25	ºC	0:02
32		4	12.86	mS/cm	5.44	pH	25	ºC	0:03
33		5	12.86	mS/cm	5.44	pH	25	ºC	0:04
34		6	12.86	mS/cm	5.44	pH	25	ºC	0:05
35		7	12.86	mS/cm	5.44	pH	25	ºC	0:06
36		8	12.86	mS/cm	5.44	pH	25	ºC	0:07
37		9	12.86	mS/cm	5.44	pH	25	ºC	0:08
38		10	12.86	mS/cm	5.44	pH	25	ºC	0:08

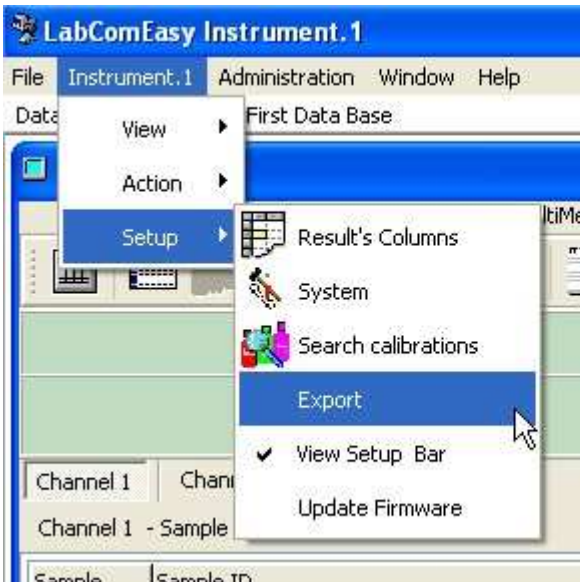
Microsoft Excel - Hoja5.xls

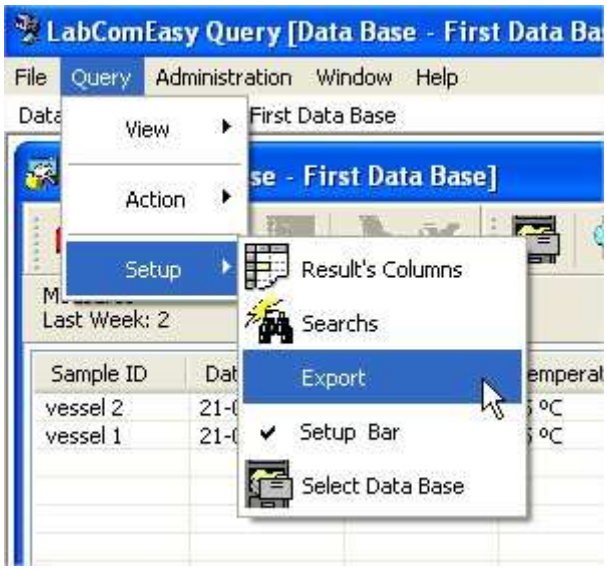
Archivo Edición Ver Insertar Formato Herramientas Datos Ventana ?

D11

	A	B	C	D	E	F	G	H
1	HACH LabComEasy V2.0							
2	Summary of I	24-03-2011 15:30:36						
3	Sample ID	Date/Time	Result		Temperature		Time	Stirring
4	vessel 2	21-03-2011 16:11	12.86	mS/cm	25	ºC	0:08	30%
5	vessel 1	21-03-2011 16:10	12.86	mS/cm	25	ºC	0:08	30%
6								

Data Export to csv file: The data can be exported from the Instrument window or from the Query window. For this purpose, the data export should be activated in the window of the instrument or in the data base (Query). Select Setup/Export.





On this display select the option "Export Results To CSV File".

Using the marked button select the file where the data will be exported.

Once the option "Export" is activated there are several options:
1- Export one result. From the daily data table or from the data base.
Just mark the result and click over 

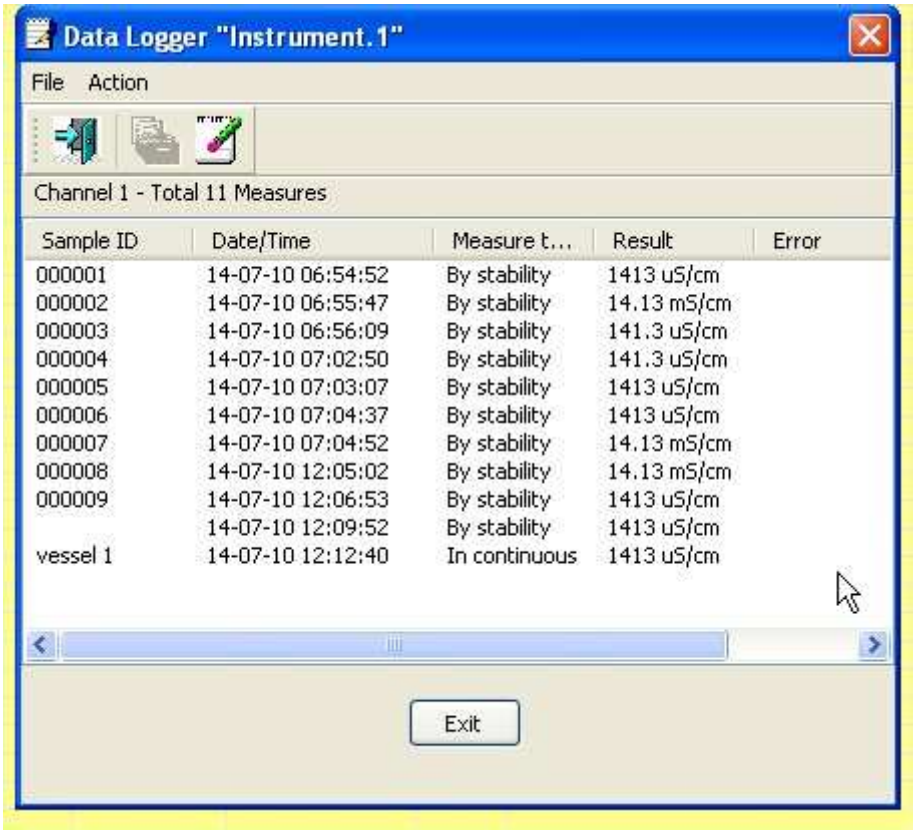
2- Export several results. Mark the different results in the daily data table or in the data base and click over 

3- Export all points of one result from measurement in continuous or by time and with graph.
Mark the result and view the graph or the complete result. Click over 

DATA LOGGER

The instruments have a Data Logger where the last 330 data points are stored. These data can be sent from the instrument to LabCom Easy by clicking on the indicated button.

A window with the received data from the Data Logger appears.

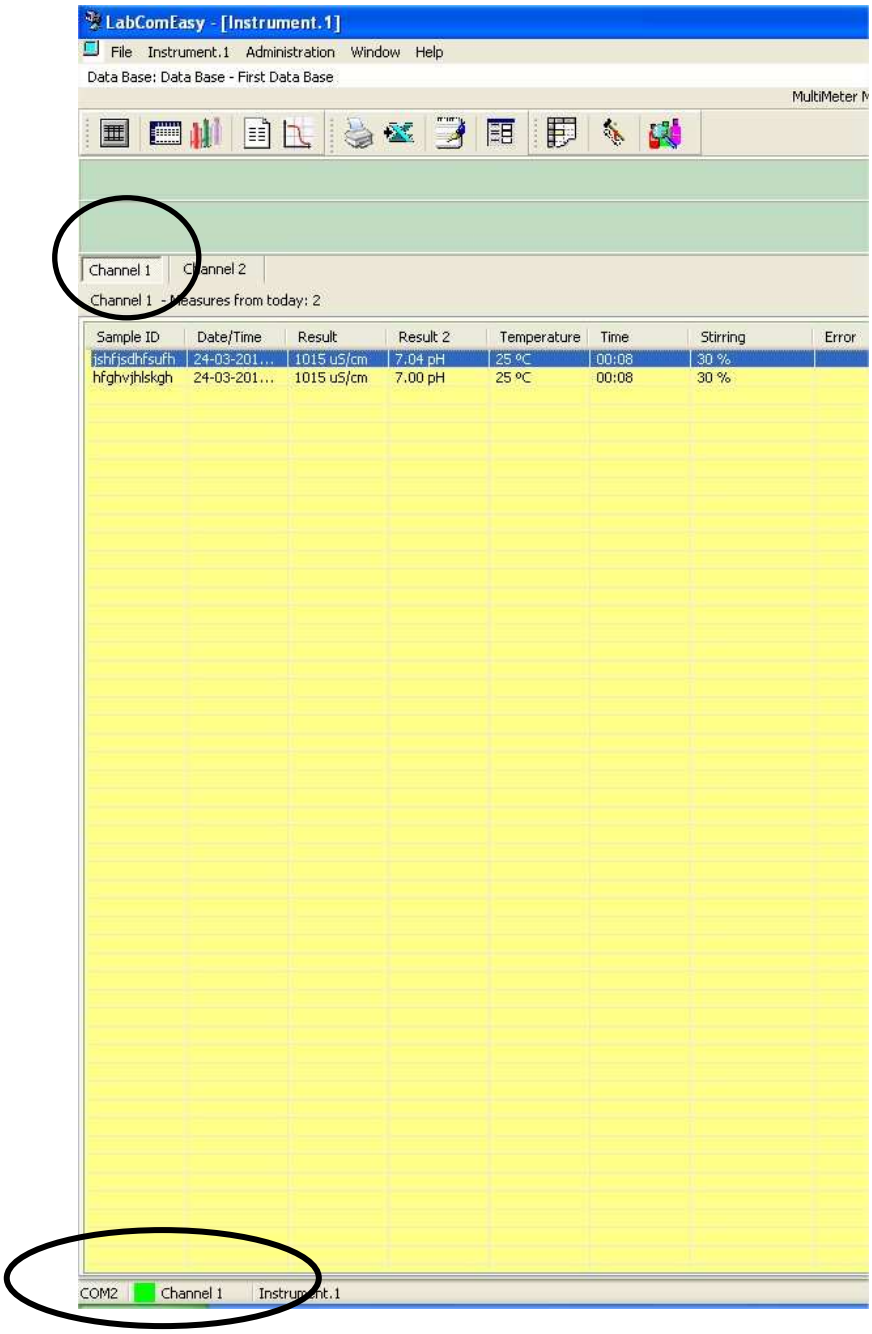


Quit without storing the data in the Data Base.

Store the marked results in the Data Base (Query).

Erase the Data Logger of the instrument connected to LabCom Easy.

MM340 AND MM 374, TWO MEASURING CHANNELS

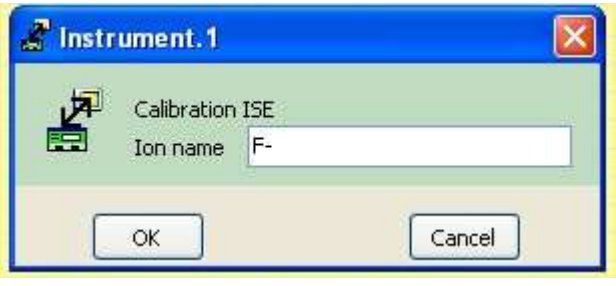


The sensION+340 and the sensION+374 are instruments with two measuring channels. On the instrument's window, on the interior part there is an indication for the activated channel at that moment.

To change from one measuring channel to the other, click over the corresponding button.

WORKING WITH ION SELECTIVE ELECTRODE

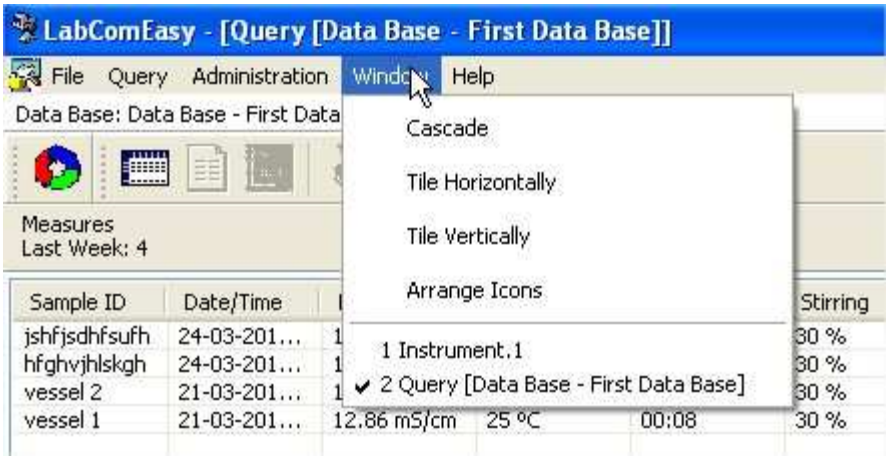
The sensION+340 and the sensION+374 can work with ISE.
LabCom Easy allows identifying the ion name when the calibration of the corresponding electrode is started.

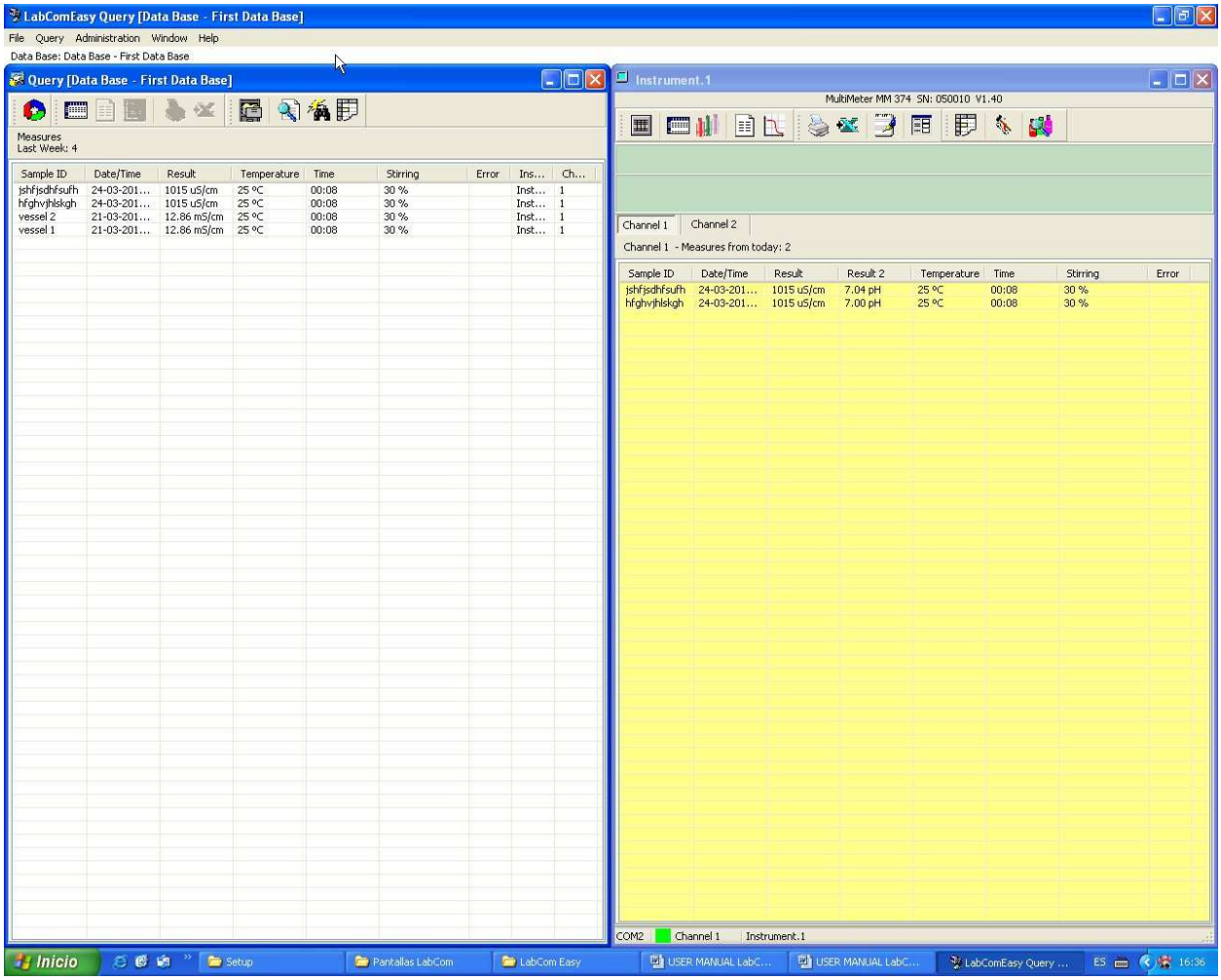


WORKING WITH SEVERAL INSTRUMENTS CONNECTED TO THE PC AND LabCom Easy

LabCom Easy allows the communication with up to 4 sensION+ instruments.
The different instruments must be configured individually (communication port per instrument) as explained in the corresponding chapter.

The window view is selected in the option “Window”.

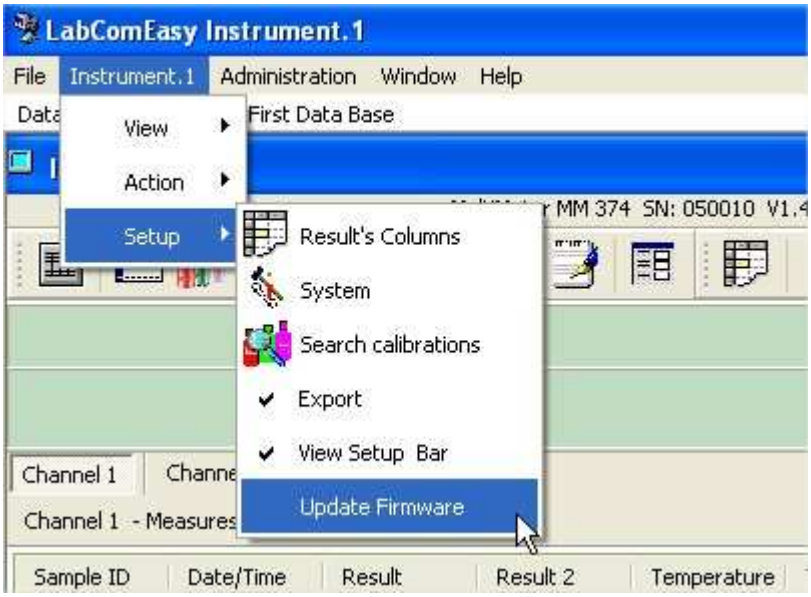




UPDATING INSTRUMENT SOFTWARE

For the correct functioning of LabCom Easy it is necessary to update the software of instruments with version below 1.4. The instructions to follow are:

1. Follow the steps described in Start up (page 9) and Instrument Configuration (page 10).
2. From the window of the instrument go to the indicated option on the menu bar. Click over “Update Firmware”.



3. The following window will appear. Select OK to proceed with the updating.

:

4. The display of the instrument will flash several seconds and the message “Updating” will appear on it. After that you can select the option “Update Firmware”.

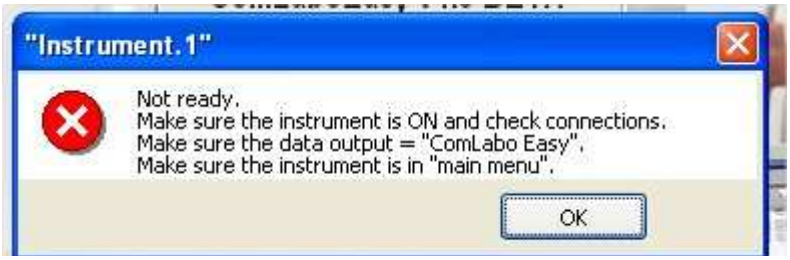
5. The updating will start.

Do not press the stop key and interrupt the updating process.
If this happens, do not switch off the instrument and repeat the updating from step 4.

6. Once the updating has finished the following display appears:

7. On the instrument, select the language and Data Output for LabCom Easy and select the option ”Exit”.

ATTENTION MESSAGES



The program is open, but the connected instrument is switched off, not connected to the PC or the Instrument Data Output is not configured for LabCom Easy. Make sure the instrument is on the main menu.
After finding out the reason for the attention message, re-select the communication port.