dynafor

Processing software for *dynafor*[™] measurements, LLX2 Software

English



GB User Manual/ On-line help



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PRIORITY INSTRUCTIONS



- Before installing and using this software, to ensure safe, efficient use, you must first become familiar with this manual as well as the manual for the dynamometer LLX2. All the specified safety measures and instructions contained in these manuals must be applied. A copy of these manuals should be available to all operators at all times. Additional copies can be supplied on request.
- 2. Make sure that anyone using the software is perfectly familiar with this manual and qualified to use the software within the framework defined by this manual.
- 3. The USB key associated to the software is a unique key. If lost, the user will be required to purchase a new complete connection kit.

- 4. The TRACTEL company shall not be liable for any consequences resulting from use of the components supplied with this software which does not comply with the use specified in this manual.
- 5. The TRACTEL company shall not be liable for any consequences resulting from any changes to the software made without TRACTEL control and authorization.
- 6. The TRACTEL company shall not be liable for any consequences resulting from the addition of components not specified by this manual.
- 7. The TRACTEL company shall not be liable for any consequences resulting from use of the present software in any way not specified in this manual.
- 8. Before use of this software with any additional equipment relaying signals on an operating system, the system user must first have an analysis performed concerning the risks specific to the functions implemented and all appropriate measures must be taken accordingly.
- 9. Any illicit operation, in particular illegal copying of this software or of the components supplied shall automatically release the TRACTEL company of all consequences resulting thereof and shall place full responsibility on the author of such illegal copying.

1 INTRODUCTION:

The "dynafor® LLX2 Software" is a PC-based software used to manage data output by the display unit of LLX2 dynamometers. The display unit is connected by USB port to a PC to allow you to display, record and graphically process the measurements output by all sensors designed with LLX2 technology.

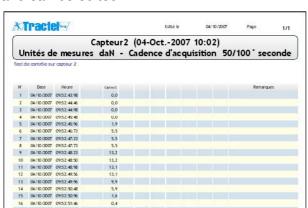
The "dynafor™ LLX2 Software" is compatible with WINDOWS: 2000 / XP Pro / VISTA.

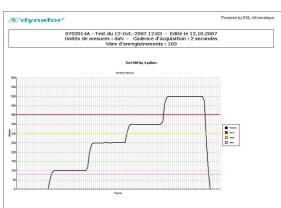
Each "dynafor™ LLX2 Software" license is protected by a unique USB key which is irreplaceable. It is impossible for you to simultaneously use more than one installation of the software.

The "**dynafor**™ LLX2 Software" contains, in its database, the translation of its interface into 7 languages :

- French
- English & US English
- German
- Dutch
- Italian
- Spanish
- Portuguese

This version of the "dynafor™ LLX2 Software" enables monitoring, management and storage of measurements generated by 1 to 8 sensors. The data is stored in the form of tables and charts and can be edited.





The data gathered when storing can be saved and transferred in EXCEL for subsequent analysis by the user.

2 INSTALLING THE SOFTWARE

The installation starts once you have inserted the CD-ROM supplied in your drive.

The procedure is automatic and is available in the 7 languages listed above.

<u>First step</u>: Choose your language.



Click « OK »

<u>Second step:</u> You can modify the path of the directory where the software will be installed.



Click « Next ».

If the selected directory does not exist, it will be automatically created on installation, after confirmation.



Click « Yes ».

<u>Third step</u>: Decide if you wish to back up files replaced during the installation process and choose the directory for installation of the backup.

Fourth step: A summary of all the choices is displayed.



Click « Next »

<u>Last step</u>: Select the desired options.



Click « Done »

By selecting « Place an icon on desktop », the shortcut icon will allow you to subsequently run the program directly from your desktop.

At any time, the « Cancel » button will allow you to exit the installation process. A confirmation window is proposed.



3 THE FIRST TIME YOU USE THE SOFTWARE

Whenever you use the software, the USB key supplied must be connected.

Windows may request installing the USB key driver. To do so, follow the Windows instructions while indicating search for configuration files on CD.

Double-click the shortcut on the desktop to start the "dynafor™ LLX2 Software".

The first time you use the software, the software default parameters are defined.

3.1 Language choice



Click on the flag of your choice, then click « Next ».

3.2 Warning



This window displays the "dynafor™ LLX2 Software" priority instructions. For access to the following screens, you must read these instructions and accept the terms by clicking the "I accept" button, then click "next".

If you do not wish to continue using the "dynafor™ LLX2 Software", click the "I do not accept" button and you will exit from the installation process.

3.3 Proprietary information



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In this window, enter the information relative to the owner:

- Name
- Address in boxes « Street 1 » and « Street 2 »
- Postal code and name of city
- Telephone No.
- Fax No.
- Email address
- You can also select a logo or an image which will be inserted in all the printing records. The size required for this image is 304x76.

To modify parameters entered in the previous screens, click « Previous ».

To access a measurement acquisition screen, click « Next ».

To exit the software, click « Exit ».

To modify these parameters at a future time, select "Proprietary information" in the "File" menu.

This information will allow you, on the PC used, to identify the software owner. Under no circumstances can the TRACTEL SAS company remote-access this information.

4 CLASSIC USE OF SOFTWARE

Each time the software is used, the USB key supplied must be connected.

Double-click the shortcut on your desktop to start the "dynafor™ LLX2 Software".

IMPORTANT: To use the software, the network of sensor(s) and display(s) must be established beforehand. The "Master" display must be connected to the PC by USB cable. (See user manual for **dynafor**™LLX2).

The archives can be browsed outside connection to an LLX2 network.

4.1 Startup

When the program opens, two options are proposed:

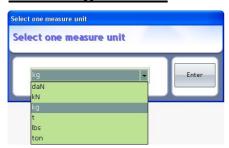


- A- Search network / Use software
- B- Browse archives

Click the button to start a test configuration.

Note: The first time the software is used, no archive is available.

4.1.1 Choosing the unit



Choose the unit of measure to be used for the test. By default, the unit selected is "kg". The unit of measure selected will be common to all the sensors independently of possible earlier individual configurations. Validate your selection with the "Validate" button.

4.1.2 Search for sensors network



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The program automatically searches for all the sensors designed with LLX2 technology present and communicating with the display unit connected to the PC via USB cable.

The various parameters read and recorded are:

- Computer address,
- Identifier / name,
- Serial No.,
- Capacity,

The sensors found are then automatically displayed:

- 1- In a tree structure at the center of the "Test Configuration" window
- 2- In the monitoring bar of the "Test Configuration" window.

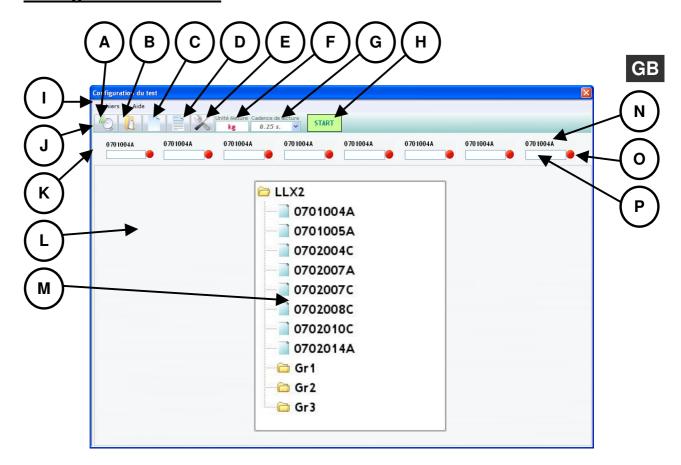
4.2 Configuring tests

4.2.1 **Definition**

Configuring a test consists in defining the test parameters, such as :

- Associations of sensors, group,
- Minimum, intermediate and maximum thresholds for each sensor present,
- Sensor names.
- Rate of reading.

4.2.2 Configuration window



- A- Search network / Use software
- B- Browse archives
- C- New configuration
- D- Last configuration
- E- Configuration of sensors
- F- Unit used
- G- Reading rate (Monitoring)
- H- Transition to acquisition mode / Save configuration
- I- Menu bar
- J- Toolbar
- K- Monitoring bar
- L- Main window
- M- Sensor network tree structure
- N- Sensor name
- O- Sensor parameter selection button
- P- Window displaying instantaneous measurement of sensor

4.2.3 New Configuration

By clicking on the « New configuration » button on the toolbar, the sensor groups are deleted and the sensors appear at the head of the list.

4.2.4 Last Configuration reminder:

By clicking the « Last configuration » button on the toolbar, the last configuration saved is automatically called up.

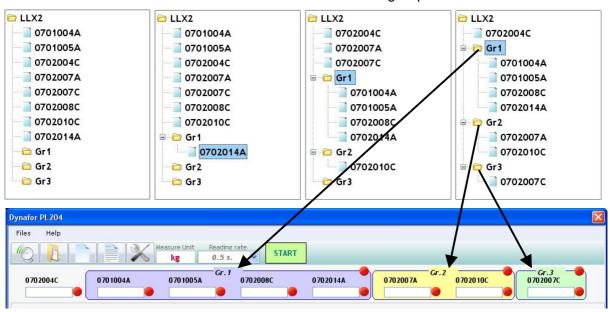
4.2.5 Association of sensors:

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The sensors can be organized into « groups ». This will allow you to simultaneously obtain, when storing measurements, the sum of all the measurements of the sensors of the group.

Using the mouse, click on the sensor name and move the name to the desired group in the tree structure, then release.

The sensors can be distributed at most into three different groups.



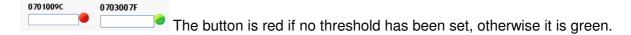
The three groups are associated to three light colors:

- Group 1 : Violet,
- Group 2 : Yellow,
- Group 3 : Green.

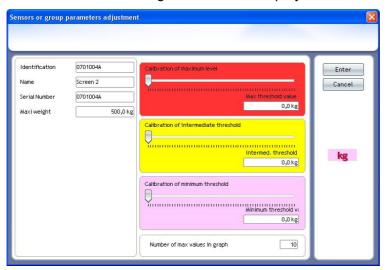
4.2.6 Modifying the parameters of a sensor:

This function is used for customized identification of the sensors, possible adjustment of thresholds and graphic resolution.

To access these parameters, click on the button to the right of the measurement display box under the name of the sensor to be modified.



The « Parameter settings » window is displayed :



The sensor name can be modified to facilitate identification of the sensors

Enter a new name (8 characters max.) in the « Name » editing window.

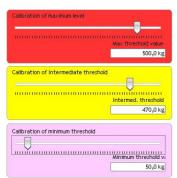
Name Screen 2

This new name will be displayed in the sensor display bar, in the title of the daughter windows and also in the measurement tables.

Three different thresholds can be set for each sensor and each group:

- Maximum threshold: crossover if measurement force is **greater** than maximum threshold.
- Intermediate threshold: crossover if measurement force is greater than intermediate threshold.
- Minimum threshold: crossover if measurement force is less than minimum threshold

A threshold value is modified using the cursor or by entering the value in the corresponding editing window.



A color code is associated to each threshold:

Maximum threshold: Red.

Intermediate threshold: Yellow,

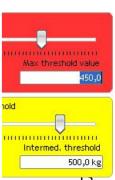
Minimum threshold: Purple.

In case of crossover, the background color of the measurement display will take the coded color. A white background indicates that no threshold has been crossed over.

To save the values of the thresholds of a sensor, the following conditions must be observed:

Value of minimum threshold < Value of intermediate threshold < Value of maximum threshold

If these conditions are not observed when validating, the value of the threshold to be modified will be highlighted.



Also choose the number of measurement points which will be contained in the chart displayed on the screen in the daughter windows.



This value can reach 99.

4.2.7 Modifying parameters of several sensors:

You can modify all the parameters of the sensors in the configuration window. Click the « Sensor configuration » button » in the toolbar.





The sensor parameters are entered in the corresponding boxes in the table.

When all the setting parameters have been entered, the buttons giving access to the threshold settings are green.

All the parameters do not need to be entered to access the measurements.

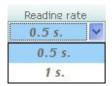
4.2.8 Modifying parameters of a group of sensors

Except for the name, the parameters adjustable for separate sensors can also be accessed for the groups.

So long as no threshold of a group has been entered or modified, the group threshold values are equal to the sum of the values of the respective thresholds of the sensors belonging to the group.

4.2.9 Modifying the sensor reading rate (Monitoring)

The software has a Monitoring function by which the rate of reading of the sensors can be adjusted.



By default, a sensor is read every 0.5 s. By selecting 1 s, a measurement will be read every second ...

The 0.25 s reading rate is only authorized provided there are no more than 2 sensors in the network.

4.2.10 Continue an archived test

It is possible to continue a test performed previously and already archived. In this case, the configuration and equipment implemented must be strictly identical to those used during the initial test. This feature will allow you, for example, to perform periodic checks on a permanent installation.

To continue an archived test, after having connected the sensors / display network to the PC:

- Open the archive,
- Resume the measurement reading, see section 4.3.3.

4.2.11 <u>Validating the configuration of a test</u>

Click the START button to freeze and save the parameters of the configuration.



This will allow you, as may be necessary during a subsequent use of the software, to click the "Last configuration" button and display the configuration of the last test performed.

The "Test window" (see section 4.3.2) will then be automatically displayed.

4.3 Running tests

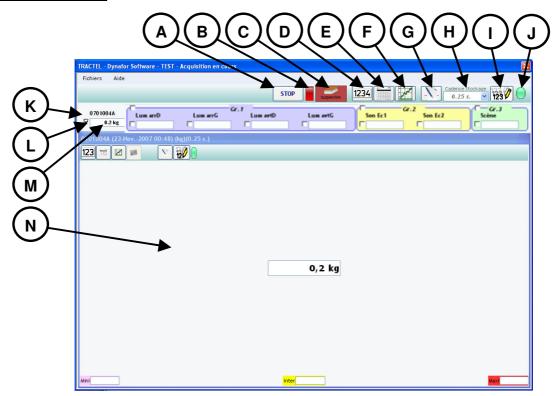
4.3.1 Definition

The term "test" refers to the set of functions which can be performed using the "dynafor™ LLX2 Software":

- Real time "monitoring" of force values measured by 1 to 8 sensors
- Save and storage of measurements, one-time or sequenced
- Display of values and possible cross-over of alert thresholds
- Print-out of values stored in the form of a table and chart
- Archiving of values stored
- Transfer of archives to standard formats: EXCEL / WORD/ PDF etc.

4.3.2 Test window





- A- Stop test (definitive) / Save measurements stored
- B- Indicator showing reception of messages transmitted by display
- C- Start / stop monitoring button
- D- Button used to display measurements in digital form
- E- Button used to display measurements in tabular form
- F- Button used to display measurements in chart form
- G- Button used for general storage of a measurement
- H- Measurement storage rate
- I- Button used to start / stop continuous storage of measurements
- J- Indicator showing storage function in progress
- K- Sensor name
- L- Box for selection of sensors to be displayed in a daughter window
- M- Monitoring window. Display of sensor(s) measurement(s).
- N- Daughter window

4.3.3 Monitoring of measurements

The monitoring function is used to read the measurements of the sensors connected in step with the reading rate defined.

Click the button to start the monitoring function. The state of the button changes to suspend the reading function.

In the monitoring bar, all the measurement windows are filled in with the information from the sensors. The groups are presented consistent with the configuration.



At this stage, the measurements only appear in the monitoring windows.

See § 4.4 for a display in the form of daughter windows (Digital / Table / Chart).

An active indicator light indicates that monitoring is in progress.

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4.3.4 Storage of measurements

Two storage modes are proposed for simultaneous saving of measurements on all the sensors :

- Instantaneous acquisition,
- Continuous acquisition.

Using the buttons in the general toolbar, the measurements generated by all the sensors, ticked or not, will be stored. Using the buttons on a daughter window, only the data for this window will be stored.

4.3.4.1 Storing a measurement

Click the ... « Store Measurement » button in the toolbar.

The measurement of each sensor will be added to the tables of sensors and groups. These will be numbered and time-stamped. They will also be added to the charts.

4.3.4.2 Continuous storage of measurements

Click the Continuous storage of measurements » button in the toolbar.

As above, the measurements will be added to the table and to the chart at regular time intervals. The recordings will stop by clicking again on the "Continuous storage of measurements" button.

Once continuous storage is activated, the storage indicator light comes on.

4.3.4.3 Adjustment of continuous storage rate

Stocking rate

0.5 s.

1 s.

2 s.

5 s.

10 s.

1 min

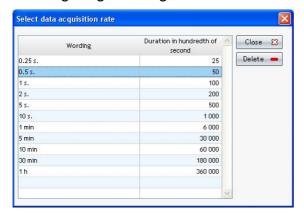
5 min

10 min

30 min

In the « Storage Rate » combo box (scrolling menu), select the desired rate for continuous acquisition.

4.3.4.4 Configuring a storage rate:



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A new rate can be created during the "Test configuration" phase using the "File" / "Rates" menu.

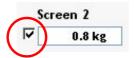
On a new line, indicate a wording for the new rate and the desired interval between 2 consecutive measurements for this rate. Close the window. Your new entry is automatically saved. The time must be entered in 1/100 second.

The new rate appears in the combo box and is classed in the order of increasing times.

4.4 Displaying daughter windows

The measurements stored can be displayed in daughter windows in various forms: Digital / Tabular / Chart.

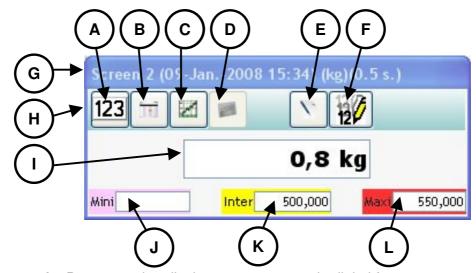
To display the daughter window of a sensor or group, tick the corresponding box.



Whatever the display mode selected, the toolbar will allow you to:

- Switch from one display mode to another
- Perform an acquisition at a moment « t »
- Start or stop continuous acquisition
- Print all the measurements recorded

4.4.1 Displaying measurements in digital form



- A- Button used to display measurements in digital form
- B- Button used to display measurements in tabular form
- C- Button used to display measurements in chart form
- D- Button used to display a group in chart form
- E- Button used to store an instantaneous measurement
- F- Button used to start/stop continuous storage of measurement
- G- Title of window reflecting test parameters
- H- Toolbar
- I- Value of sensor at moment « t »
- J- Indication of minimum threshold value
- K- Indication of intermediate threshold value
- L- Indication of maximum threshold value

To switch to digital mode, click the 123 button in the daughter window.

0,0 kg

If a threshold is crossed, the display background changes color.

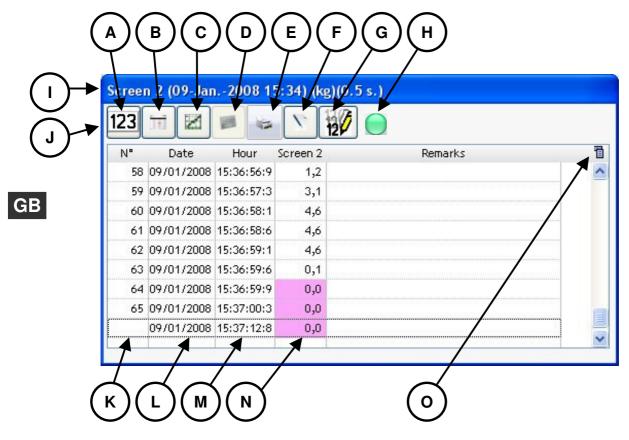
4,7 kg Downward crossover of minimum threshold.

74,7 kg Upward crossover of intermediate threshold.

774,7 kg Upward crossover of maximum threshold.

4.4.2 Displaying measurements in tabular form

To switch to table mode, click the button in the daughter window.



- A- Button used to display measurements in digital form
- B- Button used to display measurements in tabular form
- C- Button used to display measurements in chart form
- D- Button used to display a group in chart form
- E- Print button
- F- Button used for instantaneous storage of a measurement
- G- Button used to start/stop continuous storage of measurement
- H- Indicator showing storage function in progress
- I- Title of window reflecting test parameters
- J- Toolbar
- K- Number of measurement stored
- L- Date
- M- Time
- N- Sensor value
- O- Shortcut to EXCEL, WORD save menu.

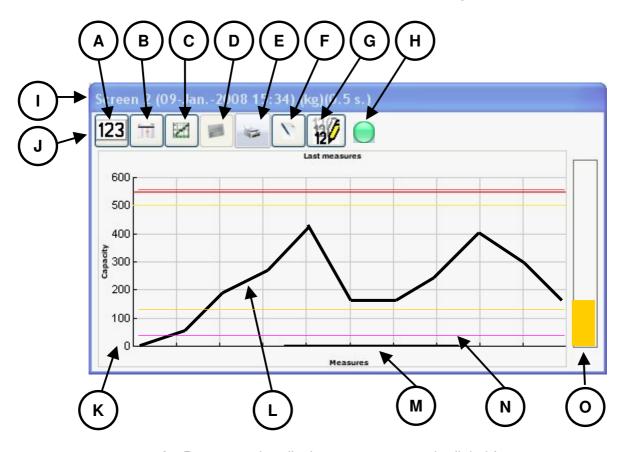
The last line of the table contains the value, at moment t, of the force at the sensor.

If a measurement exceeds the value of a preset threshold, the box for the measurement will be displayed with a background color corresponding to the color code defined for the thresholds.

A remark per line can be added. All the remarks added will be saved with the measurements and will appear on the printed documents.

4.4.3 Displaying measurements in chart form

To switch to chart mode, click the button in the daughter window.



- A- Button used to display measurements in digital form
- B- Button used to display measurements in tabular form
- C- Button used to display measurements in chart form
- D- Button used to display a group in chart form
- E- Print button
- F- Button used for instantaneous storage of a measurement
- G- Button used to start/stop continuous storage of measurement
- H- Indicator showing storage function in progress
- I- Title of window reflecting test parameters
- J- Toolbar
- K- Load scale consistent with sensor capacity
- L- Evolution of measurement
- M- Time scale, defined during test configuration step.
- N- Red, yellow and purple lines representing thresholds
- O- Cursor indicating value of force at moment "t" (monitoring).

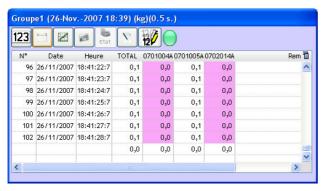
If a measurement crosses the value of a preset threshold, the cursor to the right of the window will be displayed in the color code for the crossed threshold.

4.4.4 Other displays

4.4.4.1 Group table

Compared with the table for a sensor, to display a group, the table comprises additionally:

- The total sensors of the group,
- The measurement of each sensor of the group.

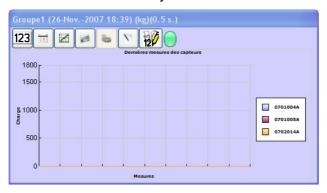


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4.4.4.2 Group chart

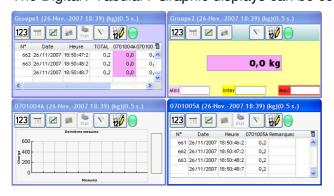
For the graphic display as seen above for the sensors, the sum of the measurements of the sensors of the group is displayed.

There is another . « Sensors of a group » button which you can use to display the curves of each sensor. The key will contain the name of the sensors.



4.4.4.3 Combined displays

The Digital / Tabular / Graphic displays can be combined at any time :

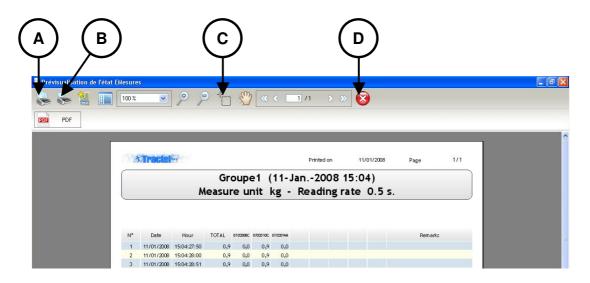


5 PRINTING

You can print all the measurements stored in tabular or graphic display form.

5.1 Printing tables

Select the tabular display mode and click the etat w print w button in the daughter window.

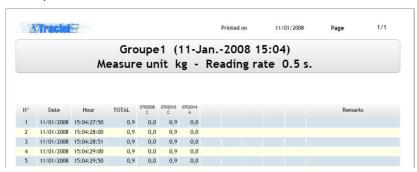


- A- Button used to print all pages
- B- Button used to print current page
- C- Button used to zoom on defined area
- D- Button used to close window

The other commands are those traditionally used under Windows

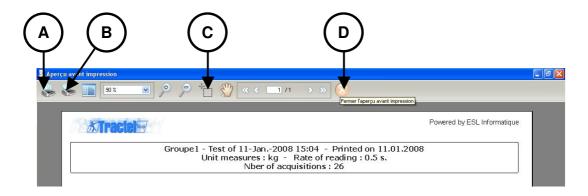
The data in the table can also be exported in pdf format.

Example:



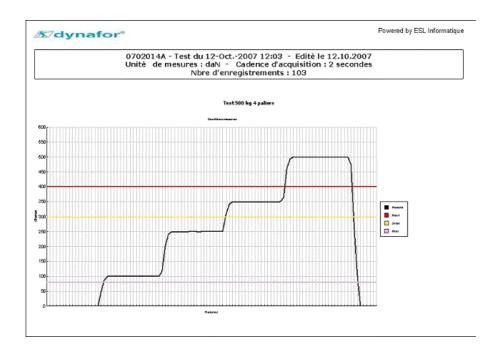
5.2 Printing charts:

Select the graphic display mode and click the etat « Print » button in the daughter window.



- GB
- A- Button used to print all pages
- B- Button used to print current page
- C- Button used to zoom on defined area
- D- Button used to close window

The other commands are those traditionally used under Windows



To modify the page header logo, refer to § 3.3.

6 ARCHIVING

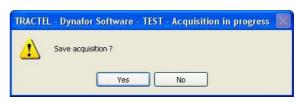
6.1 Saving measurements performed :

To stop a test, click the button in the toolbar.

The following confirmation window is displayed:



After confirming you want to stop the test, the program proposes saving the measurement acquisitions:



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If you do no not save, all the acquisitions made will be definitively lost.

Before saving, enter the test reference: A name and a description which will allow you to easily locate the test in your archives :

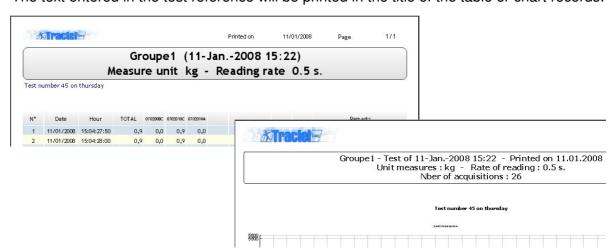


Click « Enter »

The program automatically goes to the test configuration part, reinitializing the configuration functions, sensor associations ...

To call up the last test configuration, click the subsection with a last configuration with toolbar.

The text entered in the test reference will be printed in the title of the table or chart records:



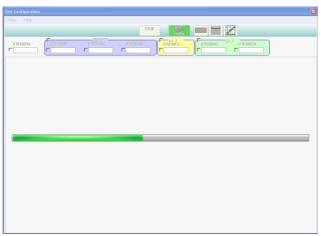
You can display the measurements previously saved by clicking the was a Archives button in the toolbar.

The list of backups is displayed in chronological order, from most recent to oldest.



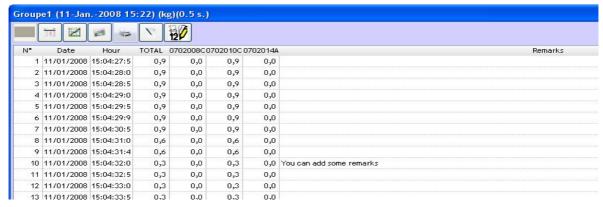
Select the archive to be displayed and validate.

All the test parameters and the measurements of the sensors and groups of the archive are loaded; a progress bar shows the loading process:



Once loaded, you can display the measurements saved in tabular or graphic form. Select the boxes to be ticked in the daughter windows for the sensors to be displayed.

You can add remarks.



Caution, any change to an archive must be saved in order not to loose it.

You can also print records (table or chart) ...

6.3 Deleting an archive :

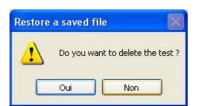
You can delete a previously saved archive by clicking the was Archives button in the toolbar

The list of backups is displayed in chronological order from most recent to oldest.



Select the archive to be deleted and click the « Delete » button.

The following confirmation window is displayed before the selected archive is definitively deleted.



7.1 Connection problems

The following error messages can appear:



Problem: Display unit not connected to PC.

<u>Corrective action</u>: Check display unit is properly connected to PC.

Check functional status of display.



Problem: Display unit not connected to PC.

<u>Corrective action</u>: Check display unit is properly connected to PC.

Check functional status of display.



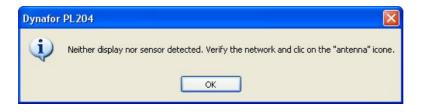
Problem: No sensor in network.

<u>Corrective action:</u> Check link between sensor(s) and display unit. (See **dynafor**™ LLX2 manual)



Problem: No sensor in network.

<u>Corrective action</u>: Check link between sensor(s) and display unit. (See **dynafor**™ LLX2 manual)



Problem: Display unit not connected to PC.

<u>Corrective action</u>: Check display unit is properly connected to PC.



Check functional status of display.

<u>Problem:</u> One or several sensors have been removed from network.

<u>Corrective action</u>: Check network. Re-start display unit.



<u>Problem</u>: Dialogue error between PC and display unit.

<u>Corrective action</u>: Re-start network search.



<u>Problem:</u> Display unit has been disconnected during test.

<u>Corrective action:</u> Save test, connect display unit, reinitiate test.



<u>Problem:</u> More than eight sensors are present in the network.

<u>Corrective action</u>: Limit to eight the number of sensors in the network. Reboot the display and the software.



Problem: Cable USB is disconnected of the display

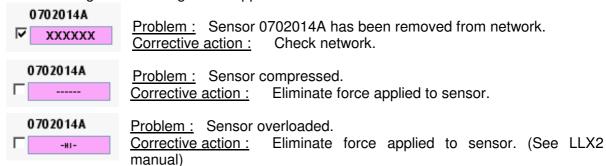
 $\underline{\text{Corrective action}}$: check the connection of the display on the USB port



Information: The display is connected again to port USB

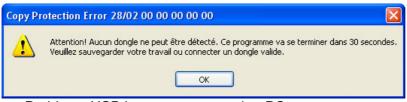
7.2 Sensor problems

The following error messages can appear:



7.3 Other problems

The following error messages can appear:

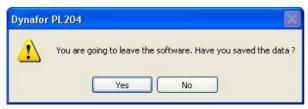


<u>Problem</u>: USB key not connected to PC. <u>Corrective action</u>: Connect the USB key.



<u>Problem</u>: USB key not connected to PC. Corrective action: Connect the USB key.

7.4 Closing the software



When the software is closed, a confirmation window is displayed to prompt you to check that the measurements recorded have been saved.

Notes:

F TRACTEL S.A.S.

RN 19 Saint-Hilaire-sous-Romilly, B.P. 38 F-10102 ROMILLY-SUR-SEINE

T: 33 3 25 21 07 00 - Fax: 33 3 25 21 07 11

N° de siret : 422 197 962 000 26

Code APE 292 D

SECALT S.A.

3, Rue du Fort Dumoulin – B.P. 1113 L-1011 LUXEMBOURG

T: 352 43 42 42 1 - Fax: 352 43 42 42 200

GREIFZUG Gmbh

Scheidtbachstrasse 19-21 D-51434 BERGISCH-GLADBACH

T: 49 2202 10 04 0 - Fax: 49 2202 10 04 70

GB) TRACTEL UK Ltd

Old Lane, Halfway SHEFFIELD S20 3GA

T: 44 114 248 22 66 - Fax: 44 114 247 33 50

TRACTEL IBÉRICA S.A.

Carretera del medio 265 E-08907 L'HOSPITALET (Barcelona) T : 34 93 335 11 00 – Fax : 34 93 336 39 16

TRACTEL ITALIANA S.p.A.

Viale Europa 50 I-20093 Cologno Monzese (MI)

T: 39 2 254 47 86 - Fax: 39 2 254 71 39

NL DK TRACTEL BENELUX B.V.

Paardeweide 38 NL-4824 EH BREDA

T: 31 76 54 35 135 - Fax: 31 76 54 35 136

LUSOTRACTEL LDA

Alto Do Outeiro Armazém 1 Trajouce P-2775-086 S.DOMINGOS DE PARNA

T: 351 214 459 800 - Fax: 351 214 459 809

TRACTEL POLSKA Sp.z.o.o.

Al. Jerozolimskie 56c PL-00-803 Warszawa

T: 48 22 25 39 114 - Fax: 48 22 64 44 252

CDN TRACTEL LTD

1615 Warden Avenue Scarborough Ontario M1R 2TR

T: 1 416 298 88 22 - Fax: 1 416 298 10 53

CN TRACTEL CHINA Ltd

1507, Zhongyue – Building 225 Fujian Zhong road 20001 SHANGHAI CHINA

T: 86 21 6322 5570 - Fax: 86 21 5353 0982

TRACTEL SINGAPORE PRIVATE LIMITED

50 Woodlands Industrial Parc E7 Singapore 75 78 24

T: 65 675 73113 - Fax: 65 675 73003

UAE TRACTEL MIDDLE EAST

P.O. Box 25768 DUBAI

UNITED ARAB EMIRATES

T: 971 4 3430 703 - Fax: 971 4 3430 712

USA TRACTEL Inc

110, Shawmut Road, Ste 2 Canton MA 02021, USA

T: 1781 401 32 88 - Fax: 1781 826 36 42

