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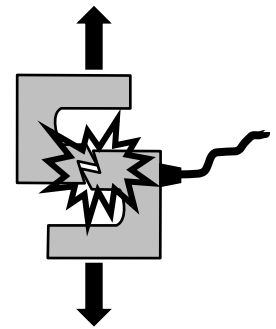
1. Introduction

COMPUTER REQUIREMENTS

Caligraph software will need access to certain folders. Before installing the program, please make sure that read and write access is granted. If this computer is part of a centrally controlled Windows Domain system, it may be necessary to consult your IT department to allow correct access. Computer running Windows XP, Vista or Seven and one USB port are required.

SENSOR BREAKAGE

It is important that test readings do not exceed 90% of the capacity of the sensor. Operating the sensor above 90% of capacity may result in permanent damage to the sensor. When operating at speeds above fifty (50) millimeters per minute care should be taken not to exceed 75% of Sensor Capacity. Should this occur, the over force protection system may not react quickly enough, and you will break the S-Block sensor. Ideally sensor capacity should be chosen such that, for most of the time, with most specimens, the load is between 10% and 75% of the total sensor capacity.



2. Startup

2.1. Connecting your gauge

Choose the appropriate connection procedure (2.1.1 or 2.1.2) according to your equipment.

2.1.1. Direct connection

You have a [Centor Touch](#) gauge model and the following items have been received:

- Setup CD
- 1 cable: USB to 26 pins connector

Connect the 26pins connector of your Centor Touch with the cable and plug the USB end to your computer.

2.1.2. Indirect connection

You have a [Centor Touch](#) or [Centor Easy/Star/Dual](#) gauge model and the following items have been received:

- Setup CD
- 1 USB or RS232 cable to 15 or 26 pins connector (15pins for Centor Easy / 26 pins for Centor Touch)

2.2. Installation

2.2.1. Software installation

Remark: Please make sure to not connect cables before the complete installation of your software.

Follow the below step by step:

1. Insert the installation CD into the computer's CD-room drive
2. Navigate to the CD-ROM drive
3. Double-click the file "Setup Caligraph V12.2.exe "
4. Follow the prompts on the screen to install the software

Caligraph software will began the process of installing the program onto your hard-drive.

By default, Caligraph software will be located under "C:\Program Files\Andilog\Caligraph", and the file "Andilog" will be automatically created.

2.2.1. Drivers Installation

Before ending the installation, a popup window asks you to run the drivers use to establish the communication in between your device and computer

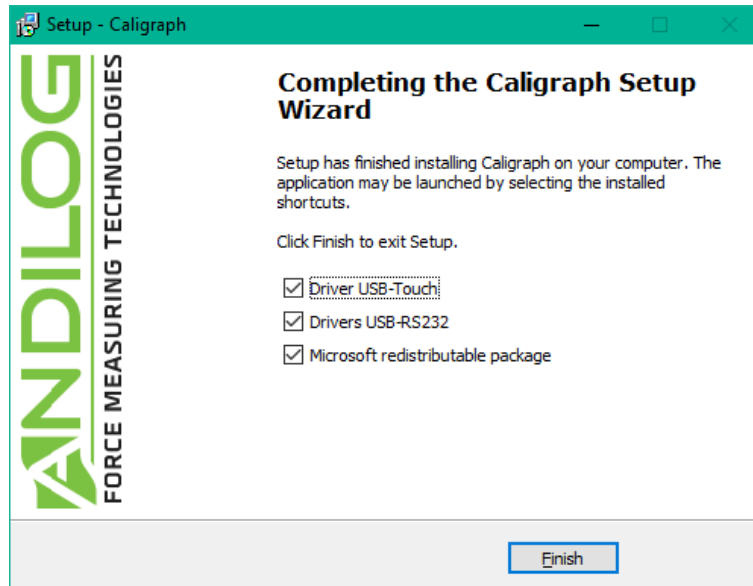


Figure 1

Direct connection

Check the box "DriverUSB-Touch", and press "Finish".

Then follow the prompts on the screen, and click successively on "Extract", "next" and "Finish".

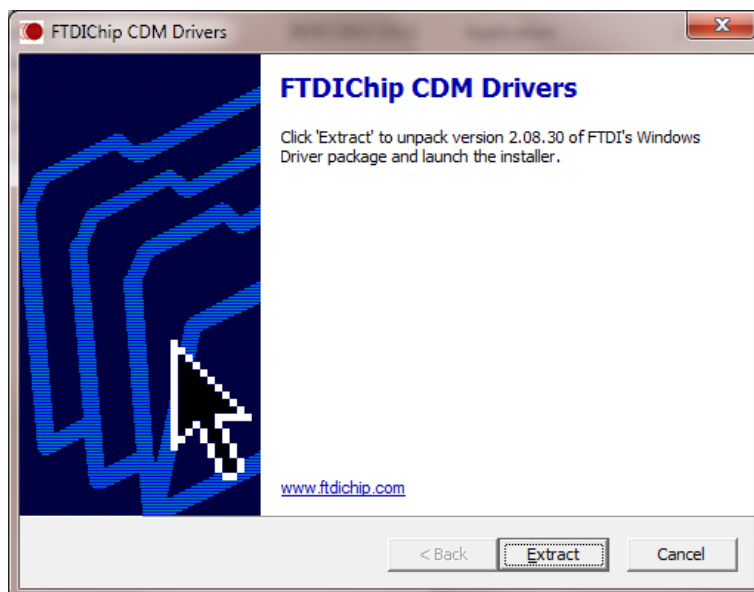


Figure 2

Indirect connection

Check the box “Drivers USB-RS232”, and press “Finish”.

If the following popup window appears, press on “Repair”:

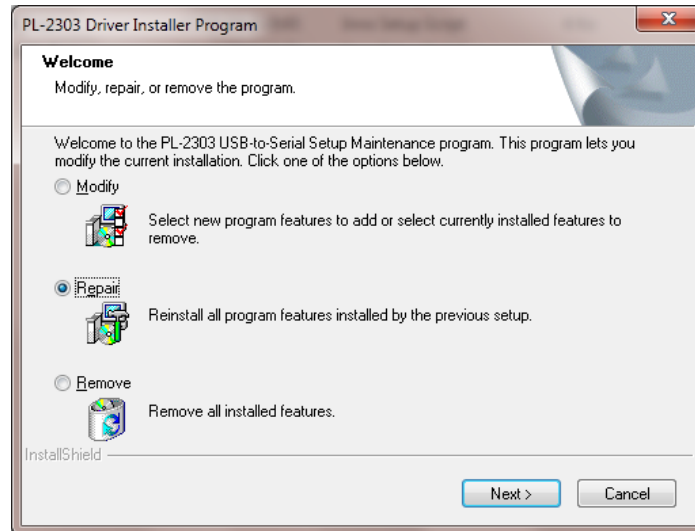


Figure 3

2.3. Cables installation

Direct connection

Plug the cable to on the side of your device, and plug the USB end on your computer

Indirect connection

Plug the cable “DB male –DB9 female” on the side of your equipment, then using the USB converter cables, connect the cables into an available USB serial port on your computer.

2.4. Setting-up your gauge

Before using Caligraph, you must enable the connection of your measuring equipment.

- For a [Centor Touch](#) model connected by direct USB to 26pins connector cable, in the “**Communication**” menu set the following values
 - Mode: Continuous1, Continuous2 or Continuous (according to the used channel)
 - Frequency: 10 to 1000Hz
- For a [Centor Touch](#) model connected by indirect USB or RS232 with a 9pins to 26pins connector cable, in the “**Communication**” menu set the following values
 - Mode: Continuous 1, Continuous 2 or Continuous (according to the used channel)
 - Speed: 19200

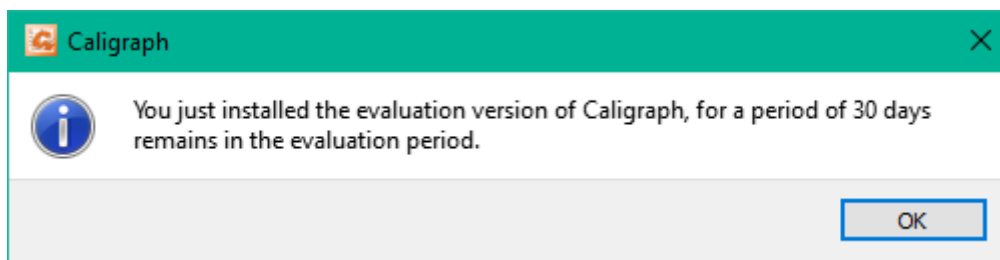
- Parity: None
- Stop: 1
- Bits: 8

- For a **Centor** model connected by indirect USB or RS232 with a 9pins to 15pins connector cable
 - **Menu RS232**
 - Bds 19200 (or 9600)
 - Par NO
 - Bits 8
 - Stop 1
 - CR **NO**
 - LF **Centor Dual: YES** **Centor Easy/Star: NO**
 - Sign YES
 - Unit YES
 - DatHour NO
 - **Menu IN/OUT**
 - Anal NO
 - Digi NO
 - RS232 CON

2.5. First Run

2.5.1. License

Run Caligraph by clicking the icon button “Caligraph” located on your desktop. For the first run, the software will display a dialog box containing information on your license validity period.

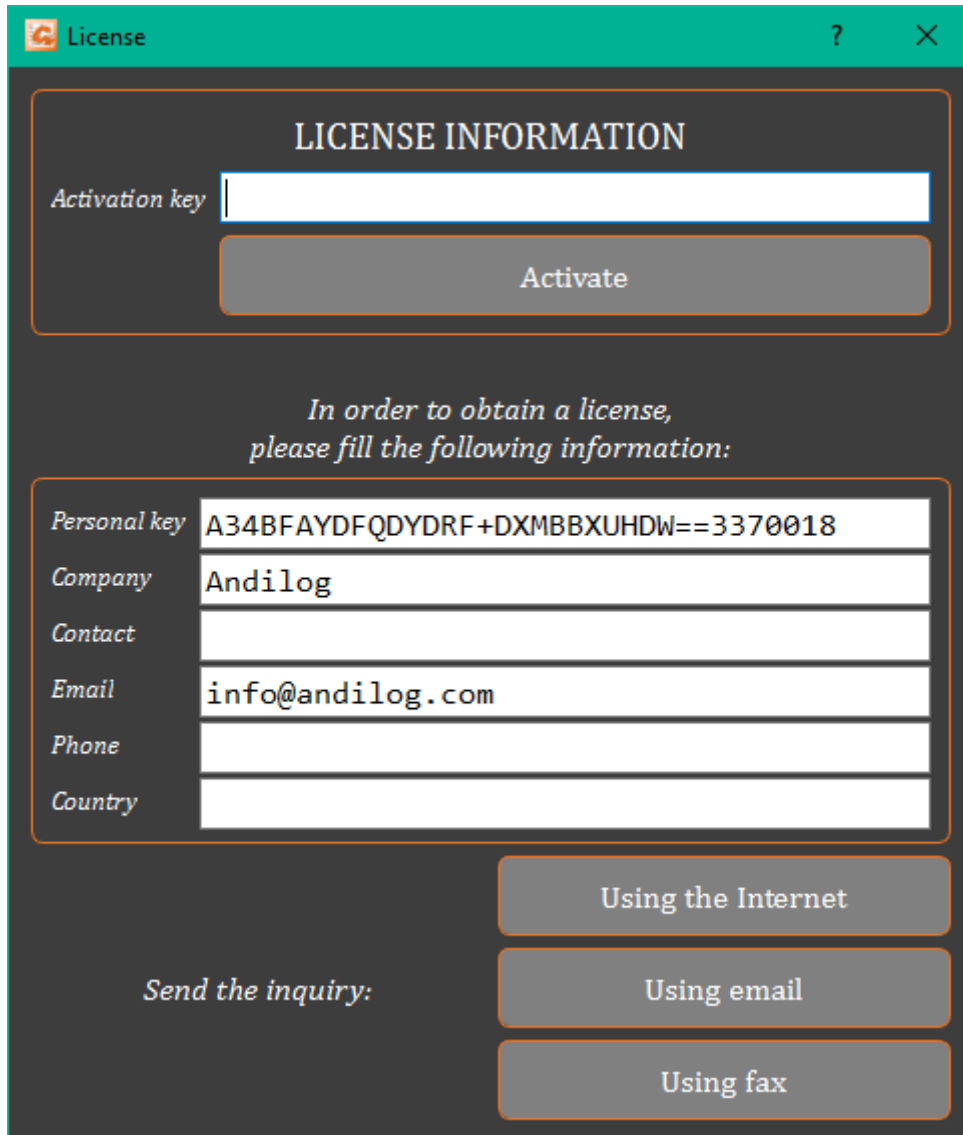


Then the following day, at the first launch of the day, you can contact us and ask for your activation software key, to switch from the “trial” to “final” license software.



If the trial has not expired, you can click on the button “LATER” to close this window. You can also ask for your activation key from the “Tools” menu.

If you choose to ask your activation key, the following windows pop up asking to fill the empty field:



You can ask for your activation key by:

INTERNET Caligraph is checking automatically if your activation key is available and auto-updating the license information directly thru the Internet.

EMAIL Caligraph will automatically prepare an e-mail with the necessary information to obtain the activation key. You just email it. Once you received an email back, copy and paste the required information.

MAIL OR FAX If you have no internet connection and don't have access to an email box from your computer, you can print the required information and send this copy to our attention at info@andilog.com. We will provide you the activation keys.

2.5.2. File location

When Caligraph is started the first time, a dialog box is displayed requiring choosing the location of the "CaligraphData" file. This folder will contain all the data saved for each of your tests and test setup you create. We **DON'T** recommend using "Program File" folder location or one of its sub-folder; as it may cause interaction issues with the software Caligraph, even if you are administrator on your computer.

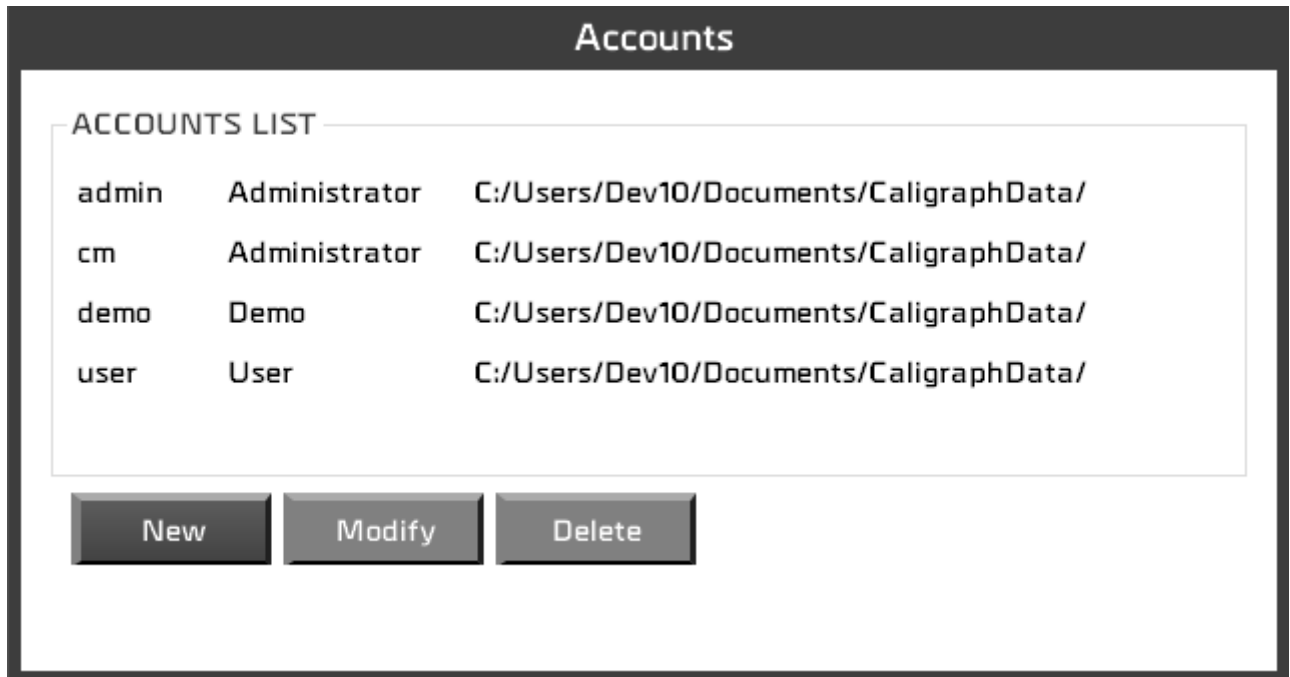
Then the Caligraph software will require you to enter a user login and password (a login and password).

Remark: Default login is: "admin" and there is no password. Please refer to the next paragraph to create or modify a user account.

Every time that Caligraph software is started, a 'Splash-screen' is displayed requiring the entry of a valid account.

2.5.3. User/Administrator accounts

Under "Tools" option from the Home Window menu, select "Accounts". Here is a snapshot of the dialog box:



Caligraph software has two levels of account: “[user](#)” (restricted access) and “[administrator](#)” (unlimited access).

An operator login saved as “user” will be not able to access to the following options: “Create/modify a Test setup”, “delete a curve”, “delete a test” and “Create new account”, however he will be able to access to the “account setting” to modify its password.

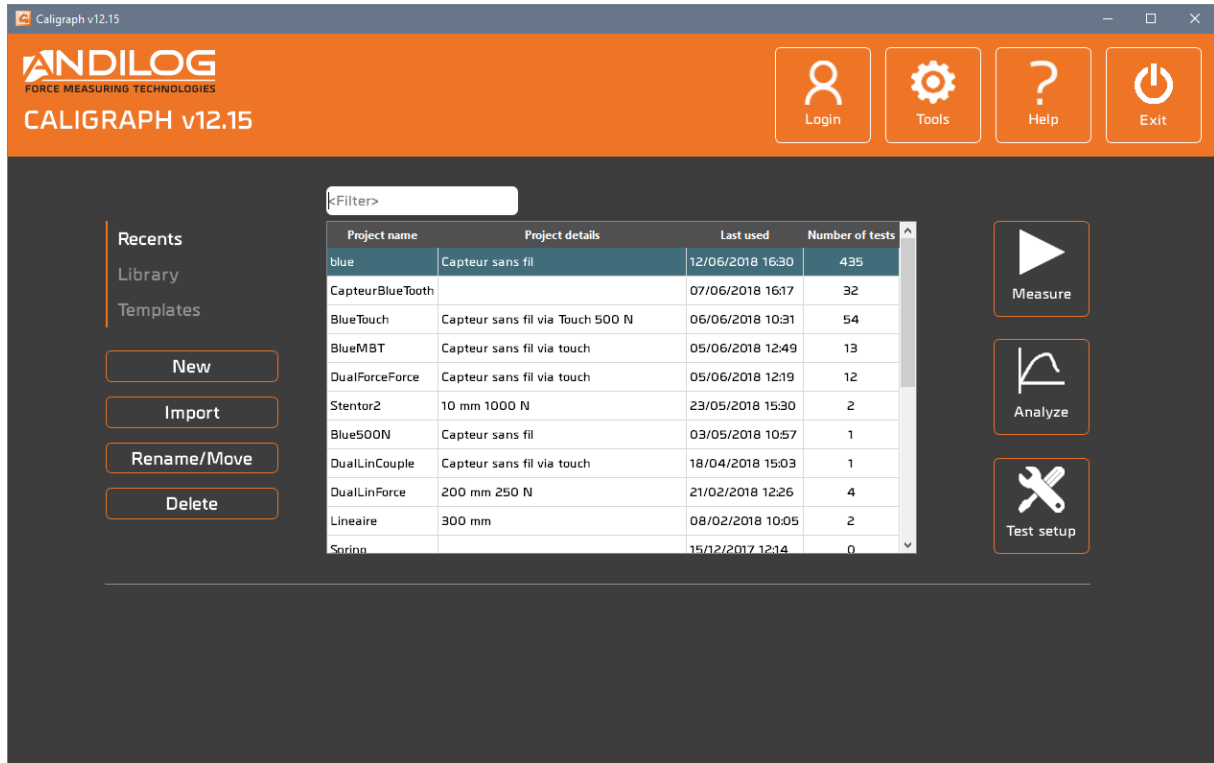
An “administrator” login has full access to all menu of the Caligraph software.

The accounts dialog box displays all accounts, user and administrators. You can modify the account level, name and password.

You are also able to display the account, with which you are currently connected, but due to security reason you can’t delete it or either changes its level.

3. Home Window

Once identified, you access the main menu of Caligraph software:



3.1. Project types

Using the 3 tabs on the left « Recents », « Library » and « Templates », you can select the projects displayed in the list. You can also look for a specific project using the top filter.

RECENTS Latest projects opened

LIBRARY All your projects

TEMPLATES Project templates. It contains a list of projects in read-only mode. It is only available for Administrators account

3.2. New

This button allows to create a new project; only administrators can create new projects. Depending on the tab selected, you can create different types of projects:

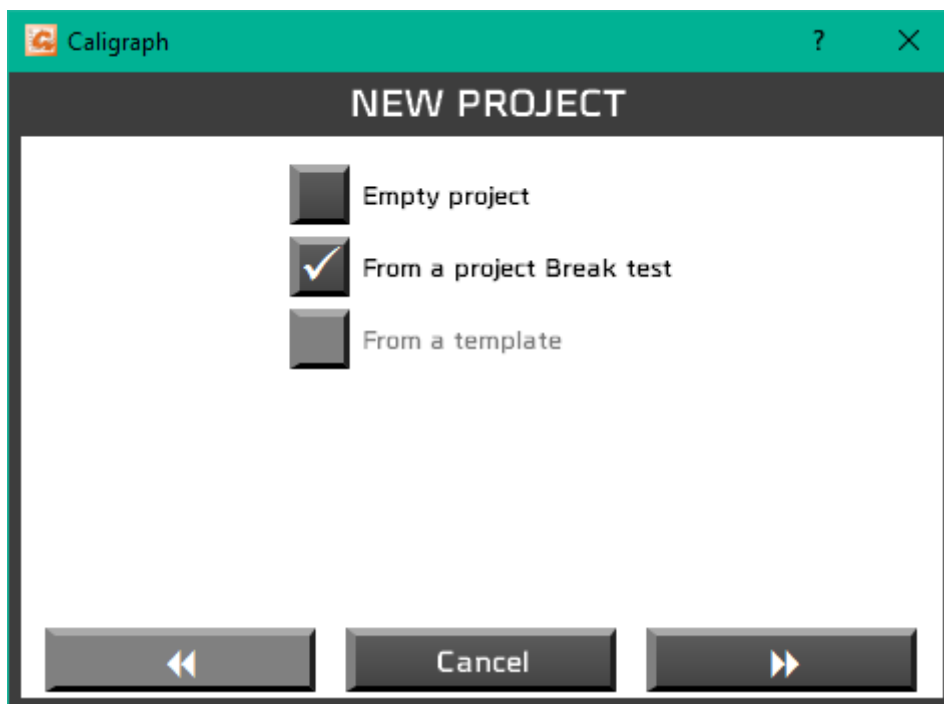
**RECENTS
LIBRARY**

Create a blank project or a project based on the selected project from the list

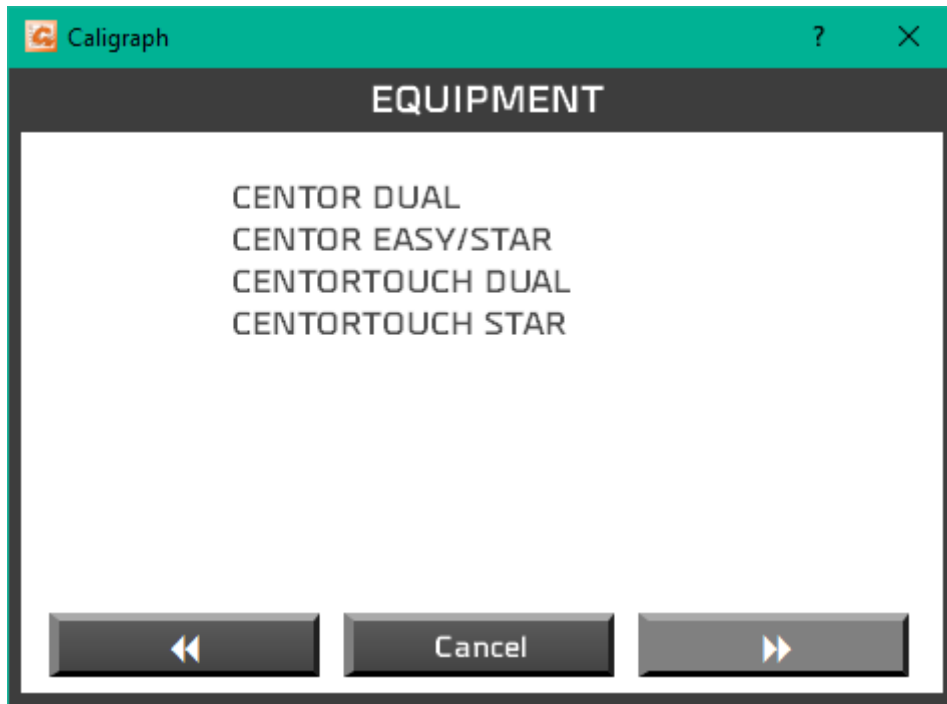
TEMPLATES

Create a blank project or a project based on the selected template from the list

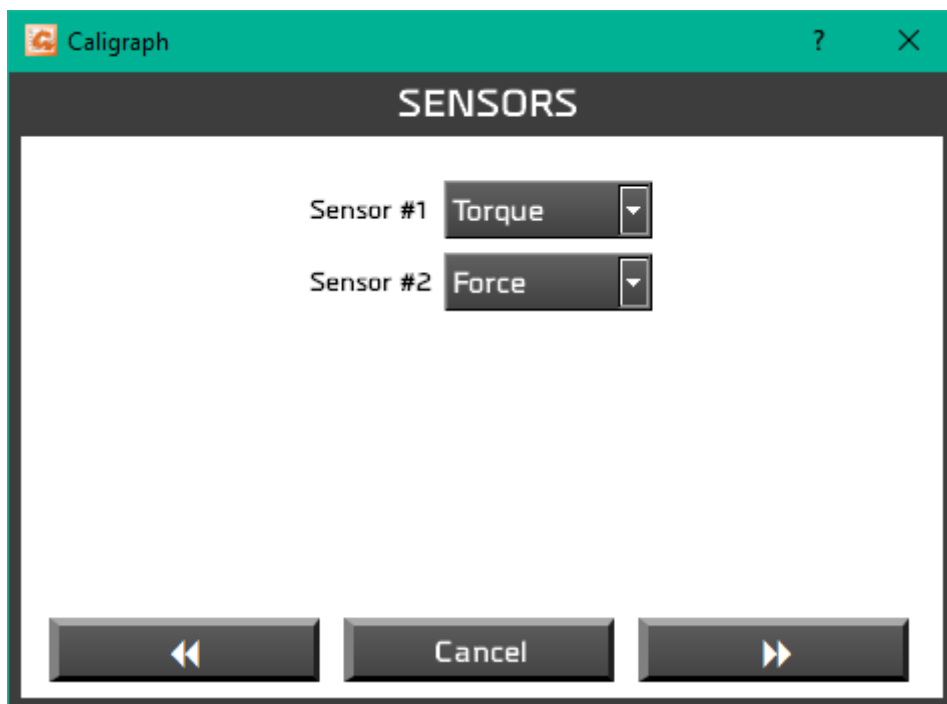
New project assistant:



Depending on your setup, different types of tests are available.

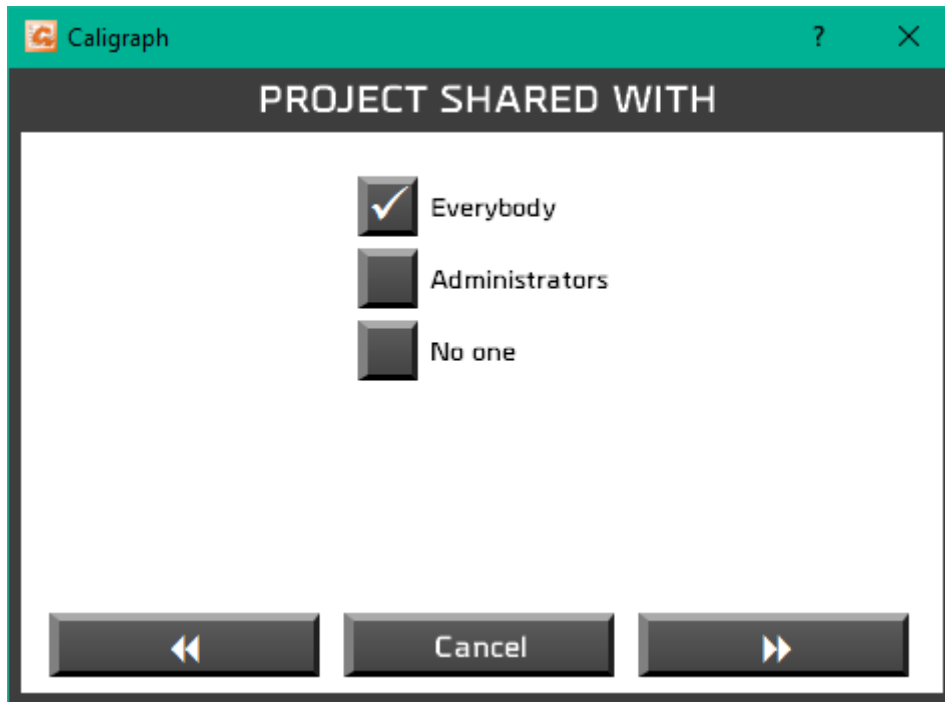


First choose the type of instrument you want to use.

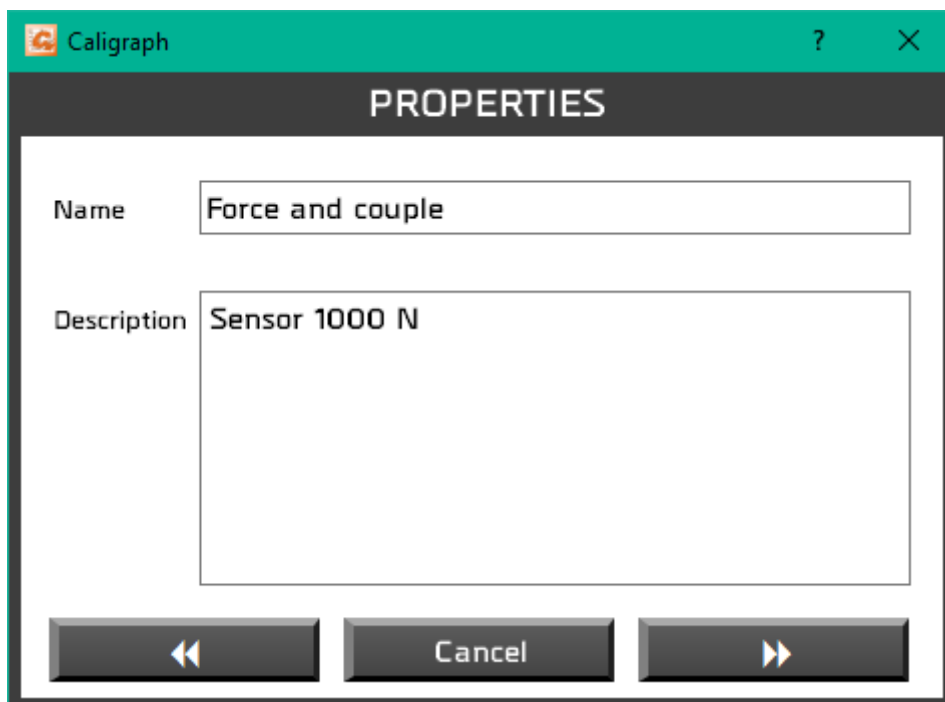


And the type of sensors.

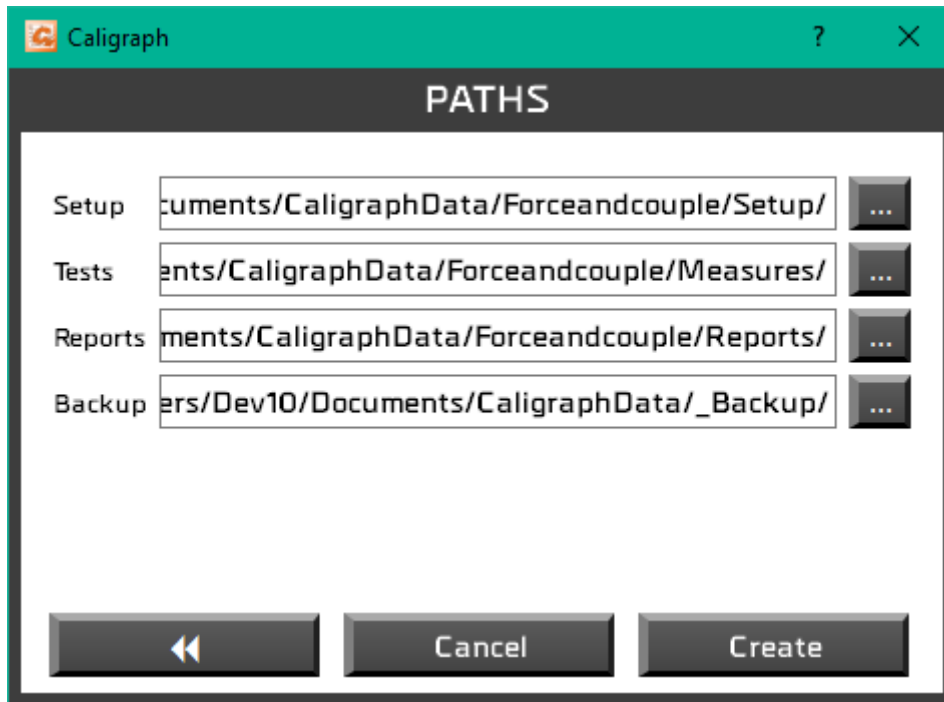
Then, you can define the access rights to this project (all users, administrator accounts or only you):



Finally, you can specify the name and give a short description of your project:



And the path to save the different files, you can change the path if you need it. Default path is defined in the Tools menu at the top right of Califort.



3.3. Import

Import features are only available for Administrator accounts. It allows to import your previous test setting or to import new templates.

RECENTS If you have upgraded your Caligraph software from an older version (prior version V12.1) you can import your former projects: A windows will list all available projects. Projects from version 11.16 or prior cannot be imported.

LIBRARY

TEMPLATES Import a new template.

3.4. Rename / Move

Available only for Administrators, this feature allows you to rename a project or to move it into a new folder.

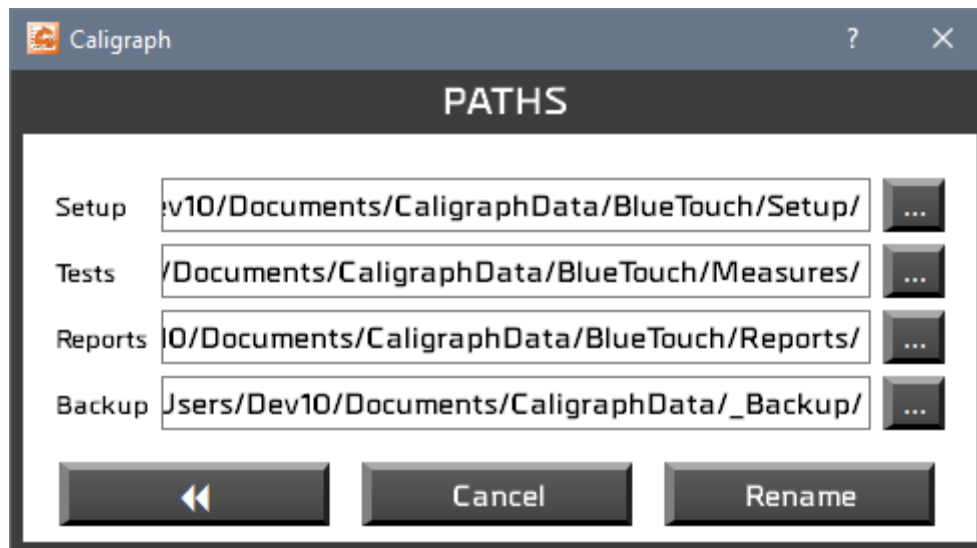
RECENTS Rename and/ or move a project

LIBRARY Rename and/ or move a project

TEMPLATES Rename a template



On the first window, you change the name of the project and on the second one you can change the path.

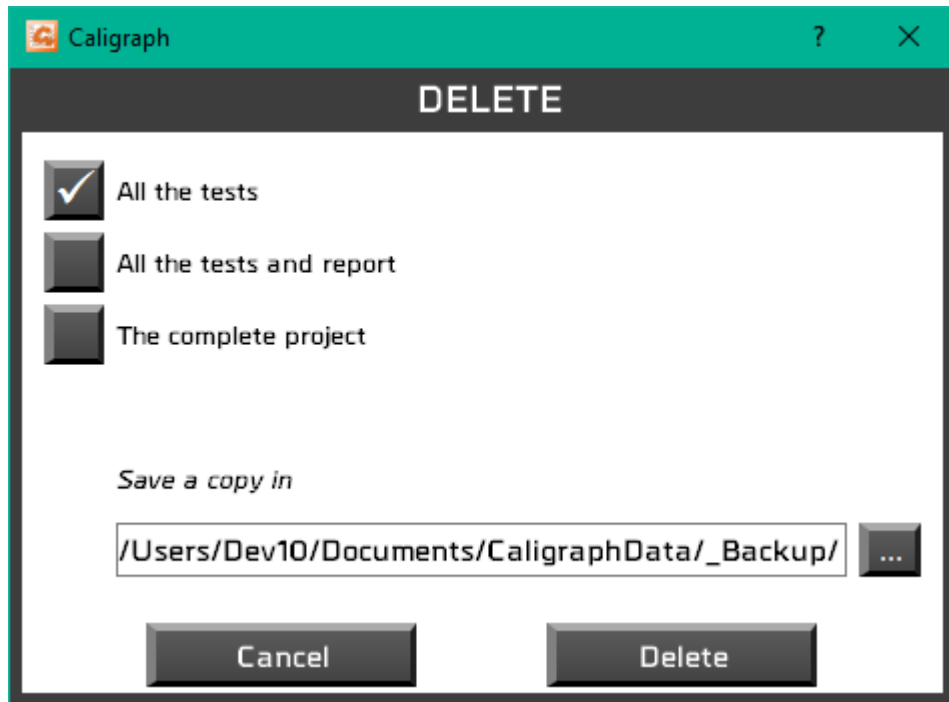


3.5. Delete

Delete features are only available for Administrator accounts.

RECENTS Delete a project from the “Recent” list. The project itself is not deleted

LIBRARY Partial or permanent removal of a project.



TEMPLATES Permanent removal of a template

3.6. Measure

From this window, you can run yours tests.

3.7. Analyze

Display results, curves and tests that have been saved and edit your reports.

3.8. Test setup

Create your test configurations, if you are logged with an administrator account.

3.9. Login

Use this button to switch between users.

3.10. Tools

This menu includes five topics:

ACTIVATE This menu is available if your license has not been enabled.

GENERAL SETTINGS Language, logo, list of available equipment's, files path

ACCOUNTS User accounts settings.

MAINTENANCE Understand and troubleshoot connection issues.

UPDATES Allows searching for updates – you must be logged in with an administrator account and your computer must have an internet connection. Once a month Caligraph searches if any updates are available.

3.11. Help

Open the operating manual.

3.12. Exit

Close Caligraph.

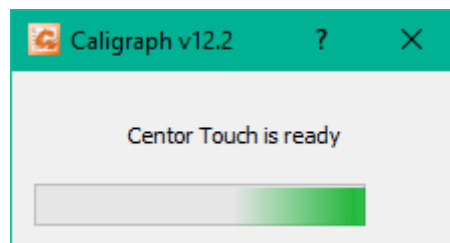
4. Acquisition Measure



4.1. Connection

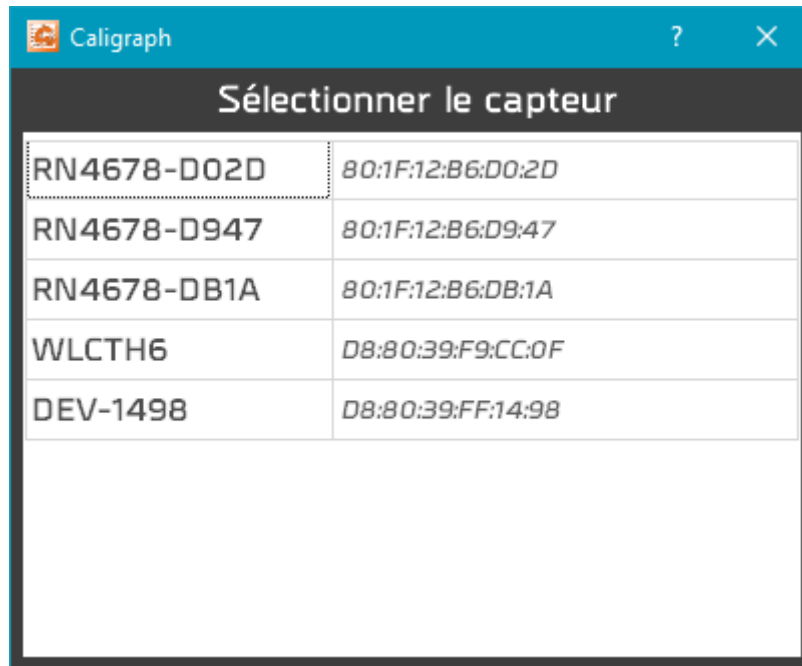
4.1.1. Centor and Centor Touch

If it is not done already, the software establishes the connection with your gauge and make sure it is compatible with your setup:



4.1.1. Wireless load cell

During the first connection, Caligraph displays the list of available paired Bluetooth device with your computer. Select the load cell you want to connect.



After the first connection, Caligraph will not display this window if it manages to connect to the same load cell. If this load cell is not available, it will display the selection window.

4.2. Shortcuts



ANALYZE Go to Analyze tab. In this section, you can display the results, curves, tests, reports...

TEST SETUP If you are using an administrator account, you can use this button to navigate directly to the test settings window.

HELP Open the operating manual.

HOME Back to the Home Window.

4.3. Acquisition



START



Start the test. Readings from the gauge are captured at a continuous rate when the start condition is met.

The START button is available if the connection with the Centor Touch is activated and if no test program is running.

STOP



Stops the test and ends the reading from the gauge.

INFORMATION AREA



- Display the start and end parameters
- Communication failures with the Centor is displayed

In case of connection failures or unexpected events, the test stopped the START button changes and a tooltip show the anomaly.



To discharge anomalies, click on the START button.

The library of all unexpected events can be found under the menu Tools / Maintenance.

4.4. Results

Break test	
Equipement	CENTORTOUCH DUAL
Sensor #1	Travel
Capacity #1	200 mm
Sensor #2	Force
Capacity #2	1000 N
Status	Connected
Position	Weight
2.644 mm	-0.010 Kg
Duration	Speed
5.80 s	
Break	Max
11.577 Kg	11.577 Kg
-None-	-None-

TEST SETUP NAME

It will change color at the end of the test:

Break test

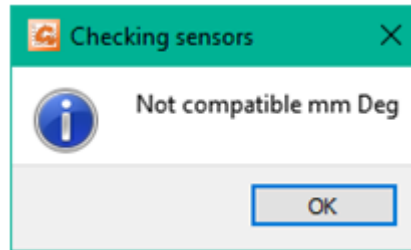
- **Red:** The curve is out of the template or at least one calculation is faulty
- **Green:** The curve is in the template and all the calculations are Okay
- **White:** No template is defined, and no calculations are controlled

EQUIPMENT INFORMATION

Equipment: Gauge defined in the test setup menu.

Sensor and capacity: Data are read from the Centor gauge (if available) and must be consistent with the test setup parameters. If the units are not compatibles an error message is displayed:

Equipement	CENTORTOUCH DUAL
Sensor #1	Travel
Capacity #1	200 mm
Sensor #2	Force
Capacity #2	1000 N
Status	Connected



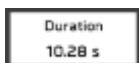
Status: This field defines in which state the Caligraph software detects your gauge. Five options are available:

- **“No connection”:** Communication failure with the Centor.
- **“Connection in progress”:** This transient state appears during the detection phase of the COM port.
- **“Connected”:** Communication success with the Centor.
- **“Connection lost”:** The Centor failed sending data for a period. The device will automatically re-connect itself.
- **“Error”:** Caligraph Software was not able to communication with the Centor.

For the connection issues, you can either:

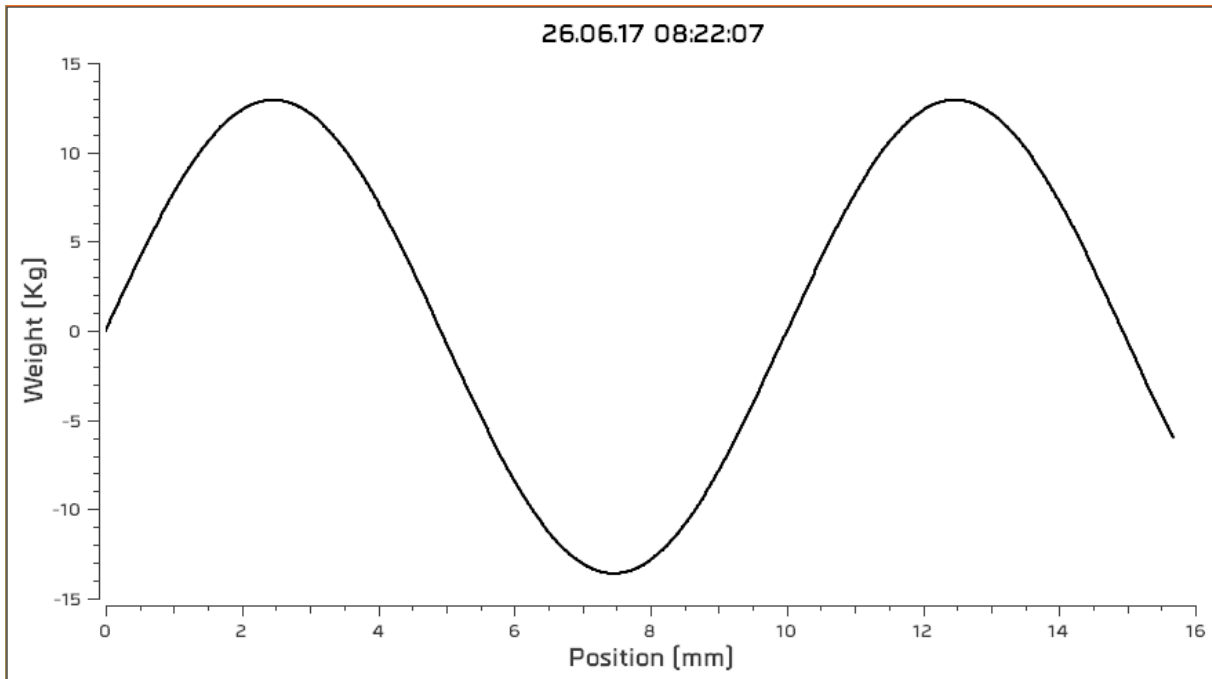
- Go back to the Home Window and re open the Measure interface (it will restart the communication process).
- Go back to the Home Window, choose Tool Menu and Maintenance to find out more about the connection issues.

CALCULATIONS AND MEASUREMENTS



- Current values (used to plot the graph, can be either: load, displacement or time).
 - Test duration.
 - Speed
 - Up to 4 calculations according to the test setup configuration.
-

4.5. Curve area



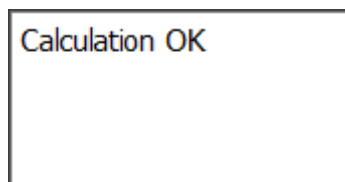
The curve is plotted in real time in this area with the units defined in the setup.

4.6. Historic from previous tests

	Date	Time	Duration	Break	Max	Comment
1	0704.16	09:00:48	5.8 s	11.577 Kg	11.577 Kg	Calculation OK
2	0704.16	09:00:22	5.699 s	10.037 Kg	10.037 Kg	Calculation OK
3	0704.16	08:59:58	4.646 s	■ 9.710 Kg	9.904 Kg	Break Fail
4	0704.16	08:59:41	5.145 s	10.037 Kg	10.506 Kg	

A red or orange square appears in front of the faulty calculations.

4.7. Comments

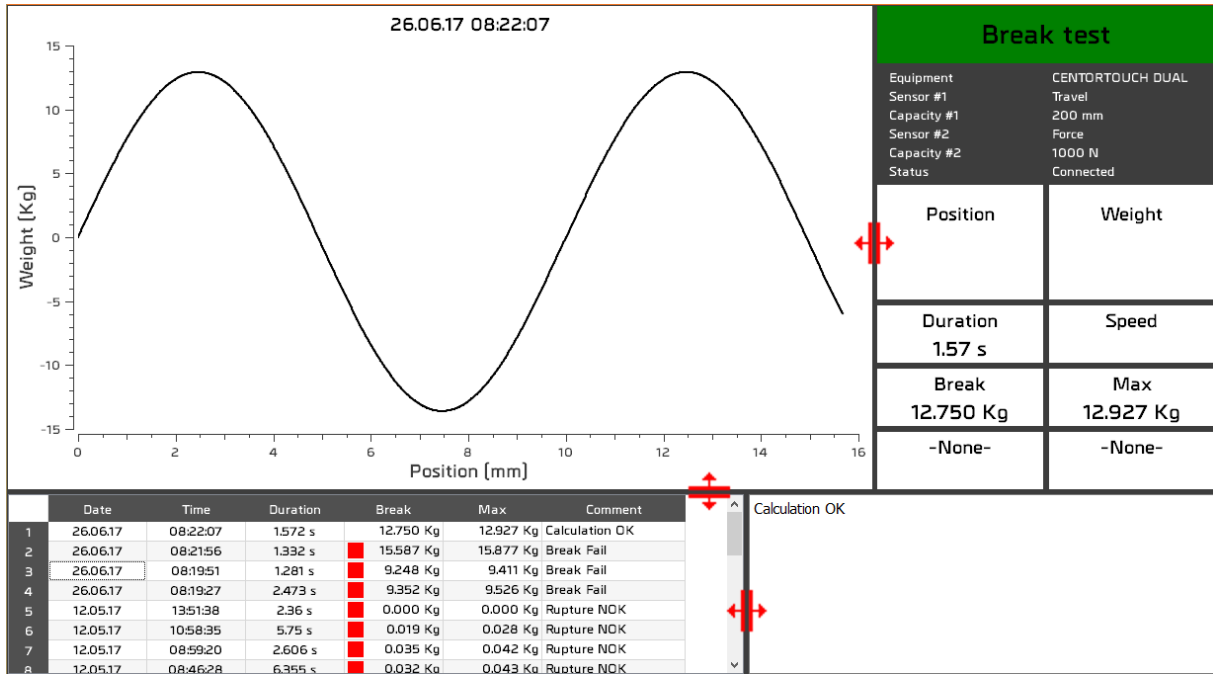


This dialog box is available for all notes and comments. It saves automatically. Some information will be automatically added:

- Anomalies occurred during the test

- Curve out of defined template
- Invalid calculations

4.8. Splitters



You can adjust the size of the different area with the splitters indicated in red on the above print screen.


5. Results Analysis



5.1. Ruler

Time	1.149	s
Position	0.9545	mm
Weight	1.8454	Kg

This window gives the distance between the two markers.

You can hide this part with the following button  From the left tool bar.

5.2. Shortcuts



FOLDER Open the folder with the raw files

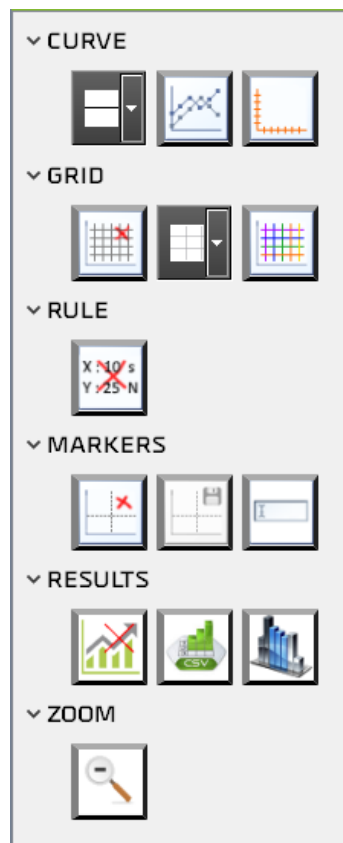
MEASURE Direct access to measure mode

TEST SETUP If you are using an administrator account, you can use this button to navigate directly to the test settings window.

HELP Open the operating manual.

HOME Back to the Home Window.

5.3. Tools bar



CURVE THICKNESS



Thickness of the curve can be adjusted from 1 to 5 pixels.

DISPLAY PLOTS



Display or nor each plot of the curve with a cross symbol, which make the use of the marker easier.

CHANGE AXIS



If your equipment has two sensors (load cell, torque, travel or angle), you can choose which sensors you want to display on the curve.



DISPLAY GRID



Display the grid

GRID THICKNESS



Change the grid lines thickness

GRID COLOR



Change the grid lines color

DISPLAY RULER



Display the ruler

DISPLAY CURSORS



Displays or hide up to five position cursors.

**SAVE
CURSORS**

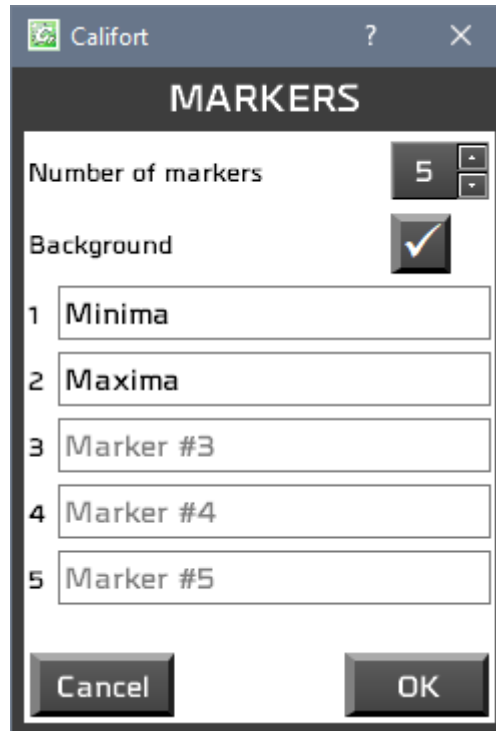


Save the marker positions

**RENAME
CURSORS**



You can use up to 5 markers and customize their names. If you check Background, the curve will be displayed in front of the marker.



STATISTICS

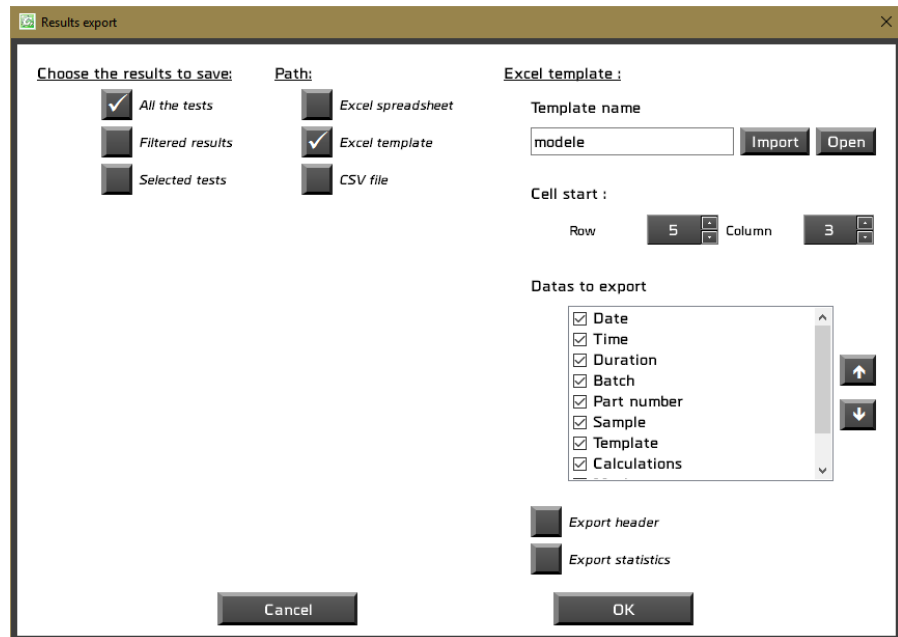


Display or hide statistics in the results chart

**EXPORT
RESULTS**



Export results to a csv files or Excel spreadsheet



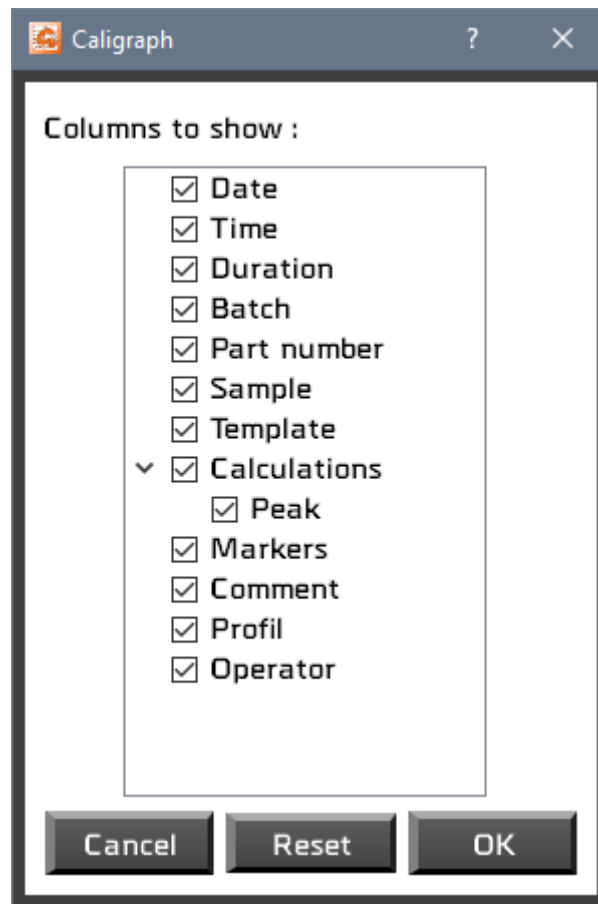
Excel spreadsheet will export all the columns in a new spreadsheet.

Excel template will allow you to choose a template file to export your results. You can also choose the columns to export.

COLUMNS



Choose here the columns you want to display in Analyze and in the reports. The button Reset check all the rows.

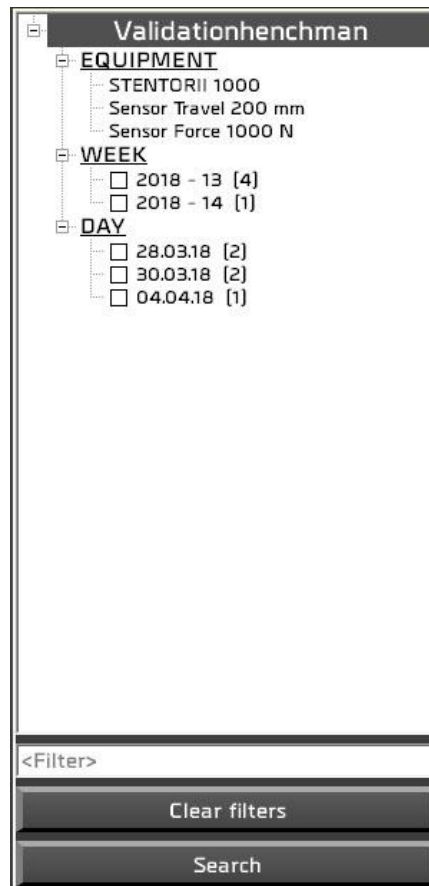


ZOOM INITIAL



Go back to the initial view of the curve. If you are using the zoom option several times, return to the original view by clicking this button.

5.4. Filters



EQUIPEMENT Test equipment and sensor specifications used during the test.

WEEK

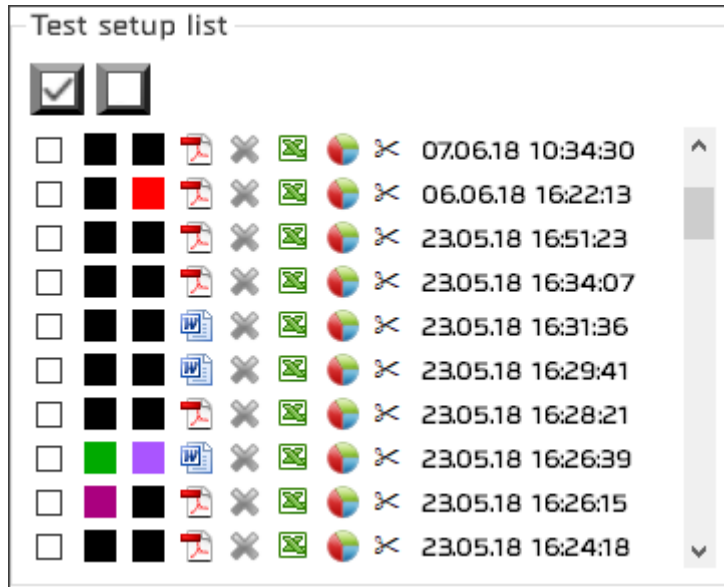
DAY

BATCH

<Filters>

You can filter the tests results using one of these three fields: specific week, specific day or batch (if defined in your project setup). Use the Search button to start filtering.

5.5. List of tests



A list of the results organized by chronological or reverse chronological order (according to the specification saved under: Tools/general settings).

CHECK ALL Select all the tests

UNCHECK ALL Uncheck all the tests

Each test sample includes:

DISPLAY A check box allowing to display or not the curve of the samples.

COLOR A colored box defining the color of each curve – you can change the color: right click on it.

REPORT An icon specifying the format of the report, if it has been generated. Click on this icon to open the report :

 WinWord

 Open Office Document

 PDF

**GENERATE A
REPORT**



A button to generate or delete the report – The report includes results of the ticked check box.



Create a report with an automatically generated format based on the test setup configuration.



Report can't be created as the sample is not ticked.



Delete the report.

RAW DATA



An icon to open the raw data in an Excel file.

CALCULATION 

It displays a chart with some calculations between 2 markers. To be available you first need to put at least 2 markers on the curve and save them. Then in the chart, choose the markers you want and click on the calculations you want to save.


Select two cursors :

	Time	Position	Force
Maxima	2.995 s	-0.332 mm	0.34 N
Minima	4.003 s	-0.332 mm	-19.652 N
Marker #3	0.299 s	-0.05 mm	-5.98 N
Marker #4	5.026 s	-0.332 mm	-9.492 N
Marker #5			

Results :

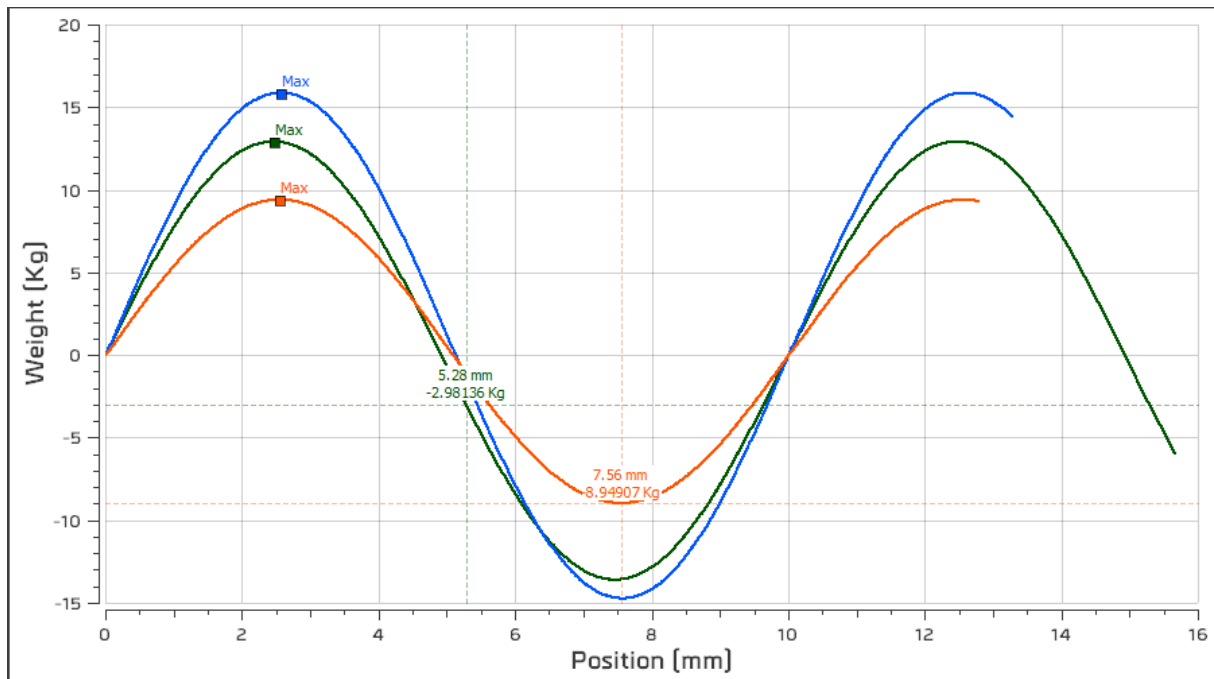
	Time	Position	Force
Difference	2.696 s	0.2820 mm	6.3200 N
Peak	2.995 s	-0.0500 mm	0.3400 N
Minimum	0.299 s	-0.3320 mm	-19.6520 N
Average	1.646 s	-0.2431 mm	-10.4565 N
Slopes of the curve		-0.0446 mm/N	-22.4113 N/mm
Slopes of the curve		-0.1046 mm/s	2.3442 N/s
Areas under the curve		-4.3290 mm.N	3.9171 N.mm
Areas under the curve		-0.6557 m.m.s	-28.2029 N.s

Save the results selected

DELETE  To remove samples from the list, click on the scissor icon – available for administrator account only.

FILENAME 19.03.15 The Filename is automatically generated, based on the date and time of the test.


5.6. Graph area



- To zoom, draw a rectangular with the mouse (right click to disable it).
- Ctrl + left click: move the graph area (right click to come back to the original view).
- You can move the two cursors on the curve. They will automatically follow the closest curve.

5.7. Library of tests

	Average		1.395 s	12.528 Kg	12.738 Kg				
	Deviation		0.155 s	3.175 Kg	3.237 Kg				
	Date	Time	Duration	Break	Max	Marker #1	Marker #2	Comme	
1	26.06.17	08:22:07	1.572 s	12.750 Kg	12.927 Kg	[5.28 mm -2.98136 Kg]		Calculation OK	
2	26.06.17	08:21:56	1.332 s	15.587 Kg	15.877 Kg	[13.27 mm 14.4612 Kg]		Break Fail	
3	26.06.17	08:19:51	1.281 s	9.248 Kg	9.411 Kg		[7.56 mm -8.94907 Kg]	Break Fail	
4	26.06.17	08:19:27	2.473 s	9.352 Kg	9.526 Kg			Break Fail	
5	12.05.17	13:51:38	2.36 s	0.000 Kg	0.000 Kg			Rupture NOK	
6	12.05.17	10:58:35	5.75 s	0.019 Kg	0.028 Kg			Rupture NOK	

- Selecting a test from this table will select the test from the list of tests without displaying the curve in the graph area.
- A red or orange square marked faulty calculations.
- Double click on a line will open details about the selected test.
- You can choose the columns to display with the button 
- Statistics are calculated on the selected tests.

Highlight this test

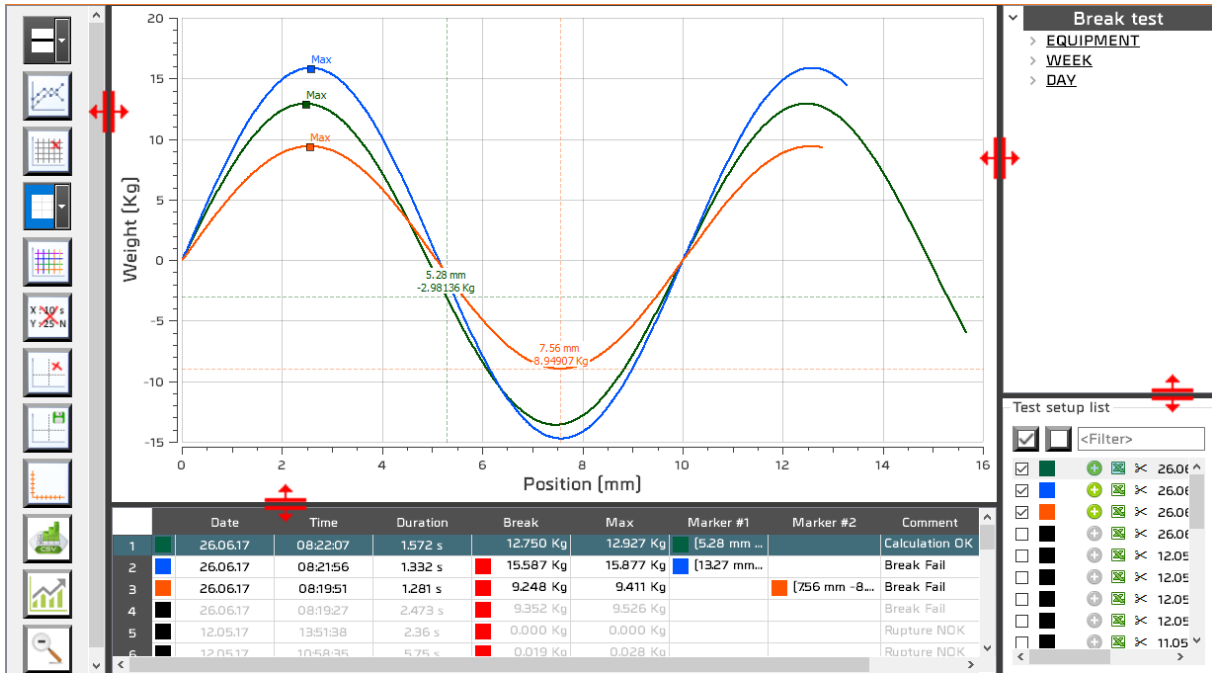
DESCRIPTION	RESULTS	ANALYZE
Date: 06.11.17	Duration: 7089 s	Markers: Maxima [2.995 s 0.34 N]
Time: 14:38:35	Template: Fail	Markers: Minima [4.003 s -19.652 N]
Batch: Lot_1	Calculations: Break -2.352 N	Markers: Marker #3 [0.299 s -5.98 N]
Part number: Ref_2_29	Calculations: Max 0.340 N	Markers: Marker #4 [5.026 s -9.492 N]
Operator:		Markers: Marker #5
Profil:		Comments: Echantillon : Longueur initiale 60 mm, Section 0.75 mm2 Rupture non valide Courbe hors gabarit Marqueur 3 - Maxima : Pentes entre marqueurs (Force) -22.4113 N/mm
		Save comments

You can add notes and save it. You can also choose to highlight this test in the results.

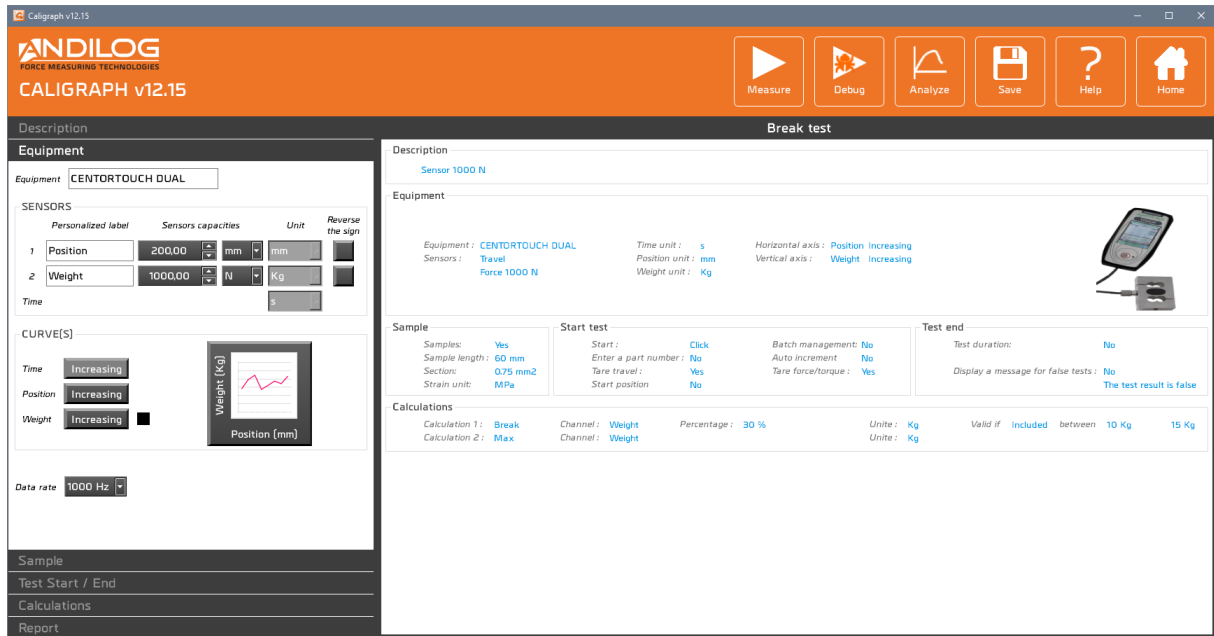
Use these buttons  or  to navigate the selected test.

5.8. Splitters

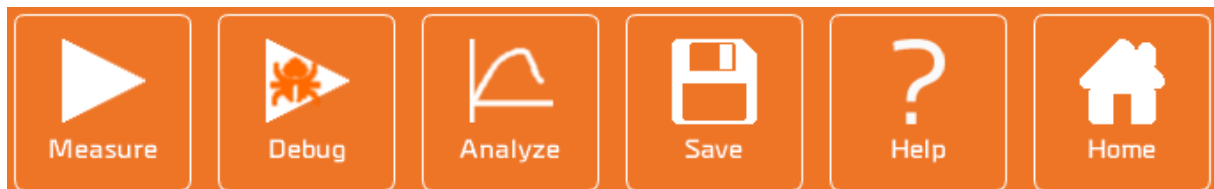
You can adjust the size of each area using the splitters.



6. Create a test setup



6.1. Shortcuts



MEASURE Direct access to the measurements window. Your test setup will be saved.

DEBUG Direct access to the measurements window. Your test setup will be saved. Test results perform under the DEBUG mode can't be saved.

ANALYZE Direct access to the ANALYZE window


SAVE Save configuration button. The Save button will be available as soon as an argument is modified. You can also use the shortcut Ctrl + S to save your setup.

HELP Open the operating manual.

HOME Back to the Home Window menu.

6.2. Summary

General view of the all test setup.

Break test			
Description Sensor 1000 N			
Equipment			
Equipment : CENTORTOUCH DUAL	Time unit : s	Horizontal axis : Position Increasing	
Sensors : Travel	Position unit : mm	Vertical axis : Weight Increasing	
Force 1000 N	Weight unit : Kg		
Sample	Start test	Test end	
Samples : Yes	Start : Click	Test duration : No	
Sample length : 60 mm	Enter a part number : No	Batch management : No	
Section : 0.75 mm ²	Tare travel : Yes	Auto increment : No	
Strain unit : MPa	Start position : No	Tare force/torque : Yes	Display a message for false tests : No
			The test result is false
Calculations			
Calculation 1 : Break	Channel : Weight	Percentage : 30 %	Unite : Kg
Calculation 2 : Max	Channel : Weight		Valid if Included between 10 Kg 15 Kg

6.3. Components

A test configuration is defined by 6 components:

- Description: general information
- Equipment: equipment used
- Sample: information on the sample's dimension when they are needed in calculation
- Test Start / Ends: start and end conditions
- Calculations: calculations to be made during the test
- Report: report settings (format, name, ...)

6.4. Tab “Description”

Description

PROJECT SHARED WITH

Everybody

Administrator

No one

IMAGE



- Description of your tests. This can be added to the report.
- Share rights (all users, administrators accounts only, only you)
- Choose a picture for your test. This picture will be displayed on the measuring screen.

6.5. Tab “Equipment”

Equipment

Equipment

SENSORS

	Personalized label	Sensors capacities	Unit	Reverse the sign
1	<input type="text" value="Position"/>	200,00 <input type="button" value="▲"/> <input type="button" value="▼"/>	mm <input type="button" value="▼"/>	<input type="checkbox"/>
2	<input type="text" value="Weight"/>	1000,00 <input type="button" value="▲"/> <input type="button" value="▼"/>	N <input type="button" value="▼"/>	<input type="checkbox"/>
	Time		s <input type="button" value="▼"/>	

CURVE(S)

Time

Position

Weight

Data rate

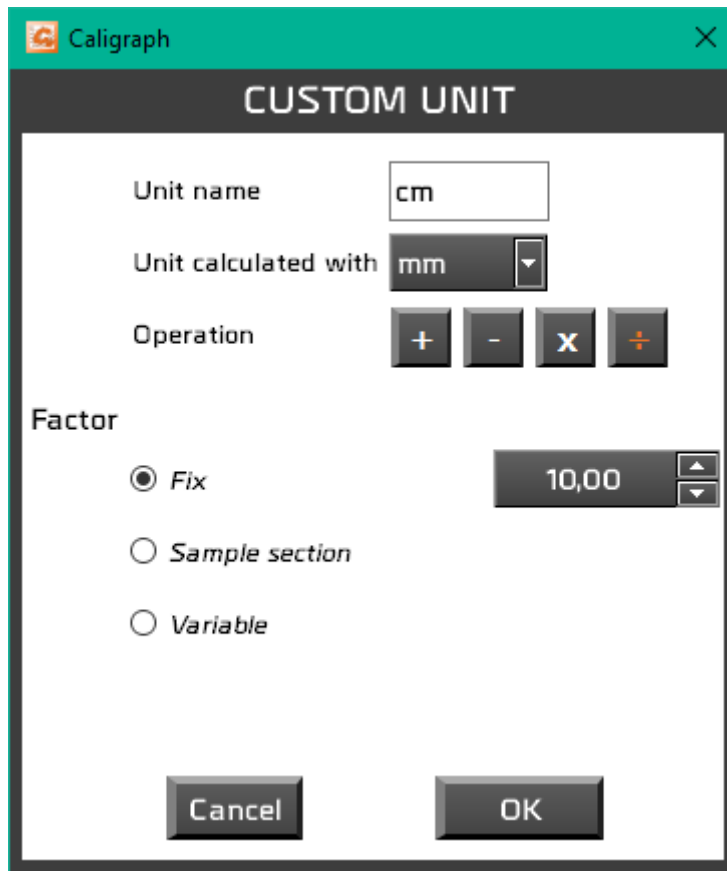
EQUIPMENT Name of the test equipment. It can't be changed.

SENSORS You can customize each sensor name

SENSOR CAPACITY
 Must be the same as the sensor you will use on your testing equipment.

UNIT		Define the units you want to display in your results or curve. It would be different from the sensor unit or custom. (You can select “Others” for your customized units – see next chapter)
REVERSE THE SIGN		The sign convention for load (i.e. ‘tension’ or ‘compression’) is set in your Centor display device, but you may want to inverse the sign of the collected data in Caligraph by checking the button.
CURVE(S)		Axis sign.
COLOR		Curve color for each sensor.
AXIS		Choose what you want to display on each axis of the curve.
DATA RATE		You can choose the data rate between your equipment and the computer.

6.5.1. Custom units



UNIT NAME Name of the unit

UNIT CALCULATED WITH Base unit.

OPERATION Operator.

COEFFICIENT

- Fixed value – when it depends on a fixed value
- Sample section (defined in the next tab) – when it depends of the sample’s dimensions
- Variable: before each test Califort will ask you to enter this Factor. It is useful if you measure each sample before testing it.

Example: Measure the pressure on a cylindrical sample

Unit name	<input type="text" value="bar"/>
Unit calculated with	<input type="text" value="N"/>
Operation	<input type="button" value="+"/> <input type="button" value="-"/> <input type="button" value="X"/> <input type="button" value="÷"/>
<input checked="" type="radio"/> <i>Sample section</i>	

6.6. Tab “Sample”

Sample

USE A SAMPLE

SAMPLE LENGTH

Fixed 60,00 mm

Variable

SECTION 0.75 mm²

Cylinder Diameter : 1,00 mm

Tube Outer diameter: 1,01 mm

 Inner diameter: 1,00 mm

Square Side : 1,00 mm

Rectangle Length : 1,50 mm

 Width : 0,50 mm

Constant Value : 1,00 mm

Variable

STRAIN UNIT

MPa

KPa

PSI

USE A SAMPLE You can define here your sample dimensions. This is required in the following cases:

- You want to use a custom unit based on your sample
- You want to display strain
- A calculation which needs sample dimensions (Young modulus...)
- If you want to have some results in Strain or Elongation

SAMPLE LENGTH

Sample original length

SECTION

Sample section

STRAIN UNIT

Strain unit, depending on your choice, the unit of the sample can change. -MPA or kPA -> mm, PSI->in)

6.7. Tab “Test Start/End”

Test Start / End

START **Click**

TEST START

Tare force/torque

Tare with button

Batch management

Enter a part number

Reference auto increment

Batch prefix

Prefix for reference

Prefix for comment

TEST END

Display a message for NOK tests

Test duration

START

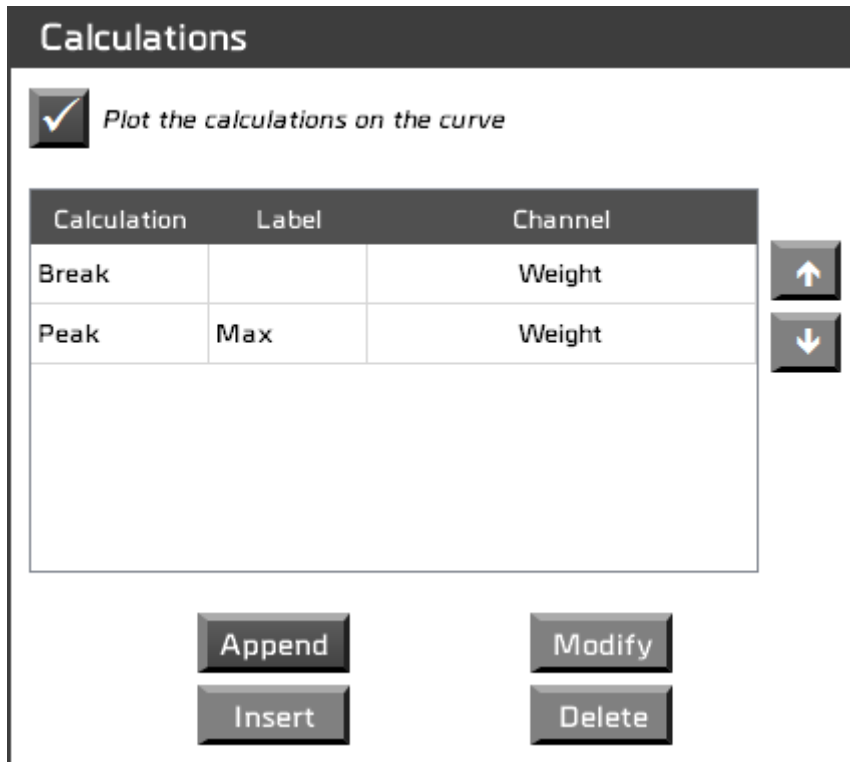
Select an option as start test condition:

- **Click:** Start the test once you click on the START button.
- **Load detection:** After a click on the “START” button, it sets a load threshold to begin the test acquisition.

TARE	It may be necessary to zero (either with the console and software) the load and displacement values, so you can choose to automatically zeroed-out at the beginning of each run.
BATCH MANAGEMENT	You can activate batch management. Caligraph will ask you the batch number before each test.
ENTER A PART NUMBER	Enable the systematic entry of a reference/name at the beginning of a new test.
REFERENCE AUTO INCREMENT	Activate auto increment for the part number
BATCH PREFIX	Prefix for batch number
PREFIX FOR REFERENCE	You can enter a prefix for the reference you will enter at the beginning of each test.
PREFIX FOR COMMENTAIRE	You can enter a default message here for the comment of each test.
AUTOMATIC TARE	The start position (or sometime called "home position") can be set with a relative position. The position of Home is set by entering a distance in the "start position" entry box. Note: if you choose to set the start position with a relative position, the "tare travel" option will be not available and vice-versa.
DISPLAY A MESSAGE FOR NOK TESTS	At the end of the test, it is possible to display a text box with a custom message if the test is not ok.
TEST DURATION	The test can be automatically ended after a defined duration.

6.8. Tab “Calculations”

This tab displays the list of calculation and actions available.



You can choose to underline or not on the curve when a calculation is done (displayed from the ANALYZE tab only). This feature can be modified for each calculation.

You can either:

APPEND Add a new calculation after the selected one.

INSERT Insert a calculation before the selected one.

MODIFY Modify the existing selected calculation.

DELETE Remove permanently the selected calculation.

TOP AND BOTTOM ARROW Move up and down the selected calculation on the list.

You can choose several calculations per test. For each calculation, you will have to setup different parameters. For example:

The screenshot shows a 'Calculation' dialog box with the following settings:

- Calculation:** Max P0-P1
- Personalized label:** Max P0-P1
- Unit:** Force
- Position P0:** 5,000 mm
- P1:** 7,000 mm
- Unit:** Kg
- Plot the results on the curve:**
- Valid calculation if:** Included
- Display limits:** 2,0 Kg (upper limit), 3,0 Kg (lower limit)
- Play a sound:** For each failure

You can choose:

- The unit to display
- Display a mark on the curve for this calculation
- Display the limit on the graph
- Have a sound if the calculation is out of range

Available calculations:

Select a calculation
✕

▼ AVERAGE	
Average	<i>Average on the whole test</i>
Av T0-T1	<i>Average in a time windows</i>
Av P0-P1	<i>Average between two positions</i>
▼ PEAK	
Peak	<i>Maximum on the whole test</i>
Max T0-T1	<i>Maximum between a time period</i>
Max P0-P1	<i>Maximum between two positions</i>
▼ MINIMUM	
Minimum	<i>Minimum on the whole test</i>
Min T0-T1	<i>Minimum between a time period</i>
Min P0-P1	<i>Minimum between two positions</i>
▼ BREAK	
First peak	<i>Valeur de la force au moment du 1er pic</i>
Break	<i>The breaking force</i>
Max Break	<i>Maximum after the break point</i>
Min Break	<i>Minimum after the break point</i>
Travel at break	<i>Displacement value at break</i>
Strain	<i>Elongation value</i>
% Strain	<i>Elongation percentage</i>
▼ Yield	
Slope	<i>Slope of the curve</i>
Re	<i>Yield point</i>
Re0,2%	<i>Proof stress</i>
Rm	<i>Ultimate strength</i>
E	<i>Young modulus</i>
▼ OTHERS	
Force at T	<i>Force at a given time</i>
Level L	<i>Value of a channel according to the value of the other</i>
Level L Step	<i>Value of a channel according to the value of the other, within a step</i>
Stiffness	<i>Sample stiffness</i>

If you choose Break for one of your calculation, you will also have the following calculations available:

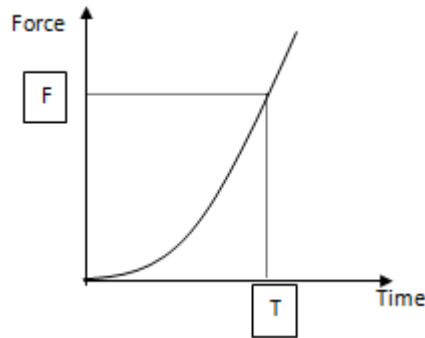
Min Break	<i>Minimum after the break point</i>
Max Break	<i>Maximum after the break point</i>
Travel at break	<i>Displacement value at break</i>
Strain	<i>Elongation value</i>
% Strain	<i>Elongation percentage</i>

If you choose Slope, the following calculations will be available:

Re	<i>Yield point</i>
Re0,2%	<i>Proof stress</i>
Rm	<i>Ultimate strength</i>
E	<i>Young modulus</i>

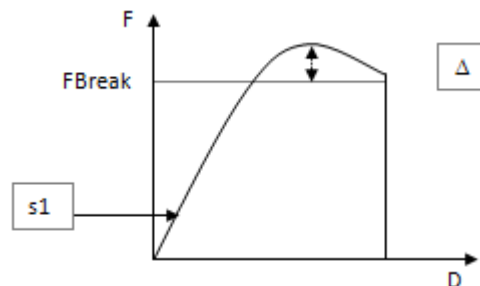
AVERAGE Calculation of the average value (load or displacement) over the total range of the test duration.

FORCE AT T Measure the value of load, at a preset time value.

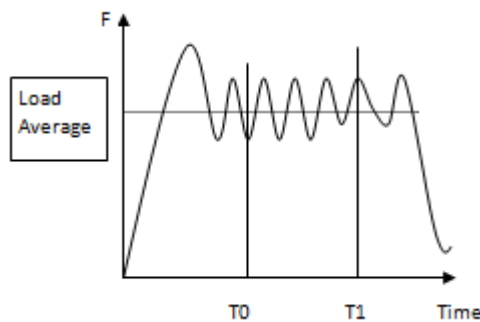


BREAK Measure the maximum load when the load decreases to a specified percentage (typically selected when a sudden fracture or break occurs instantaneously).

Break is detected when the Force F , greater than a given threshold $S1$, drop with a change factor Δf is greater than a threshold $x\%$ of the full-scale capacity of the load sensor. (Default $x = 1\%$).

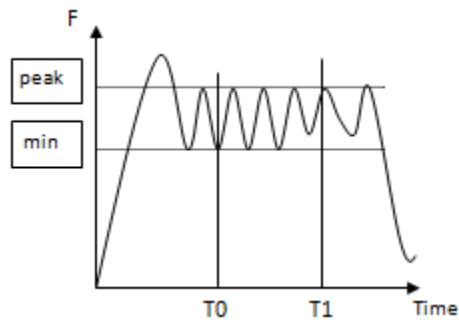


AVERAGE TO-T1 OR PO-P1 Calculation of the average value (load or displacement), in between a time interval $[T0 - T1]$ or between two positions.

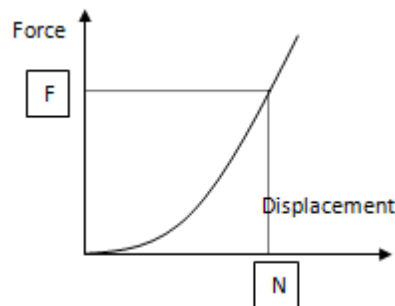


MINIMUM Maximum or Minimum in a windows time frame T0 and T1. Can be applied of force and displacement values.

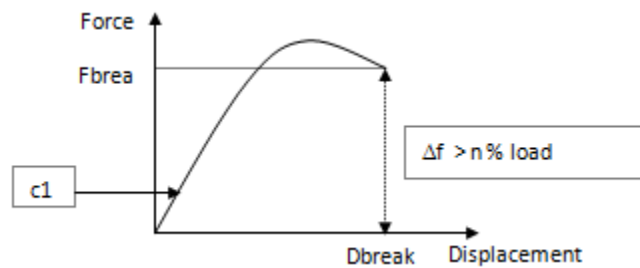
PEAK



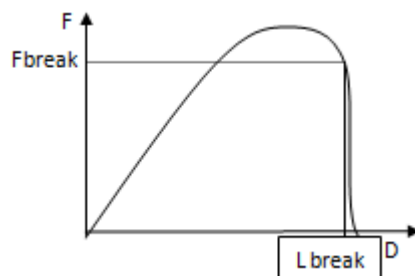
LEVEL L Measure the value of one channel when the other channel reaches a preset value.



DISPL BREAK Measure the deflection after break detection. **This calculation is available only if Calcul1 = Break.**



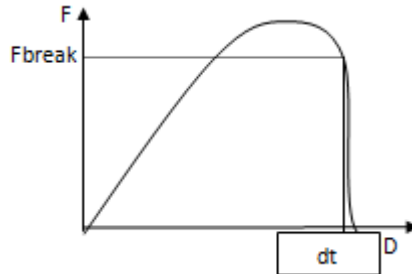
STRAIN Measure the length at break of the sample in between 1% of the sensor capacity and the break. **This calculation is available only if Calcul1 = Break.**



% STRAIN Measure the percentage of elongation of your sample from the original length.
This calculation is available only if Calcul1 = Break.

$$\%strain = dt / L0 * 100$$

L0 = Sample length at the origin



You can define conditions of Pass/Fail for each calculation:

Valid calculation if

Included

20,0 N

30,0 N

Display limits

OK Cancel

If the calculation is invalid:

- It will be marked by a red square on the historical list
- In the measure windows, the area displaying the configuration name will become red
- A note will be automatically added to the comments area
- Play a sound if the calculation is out of the thresholds

6.9. Tab “Report”

You can define a different report for each test, these reports are created in the Analyze mode of Califort. Four different formats are available:

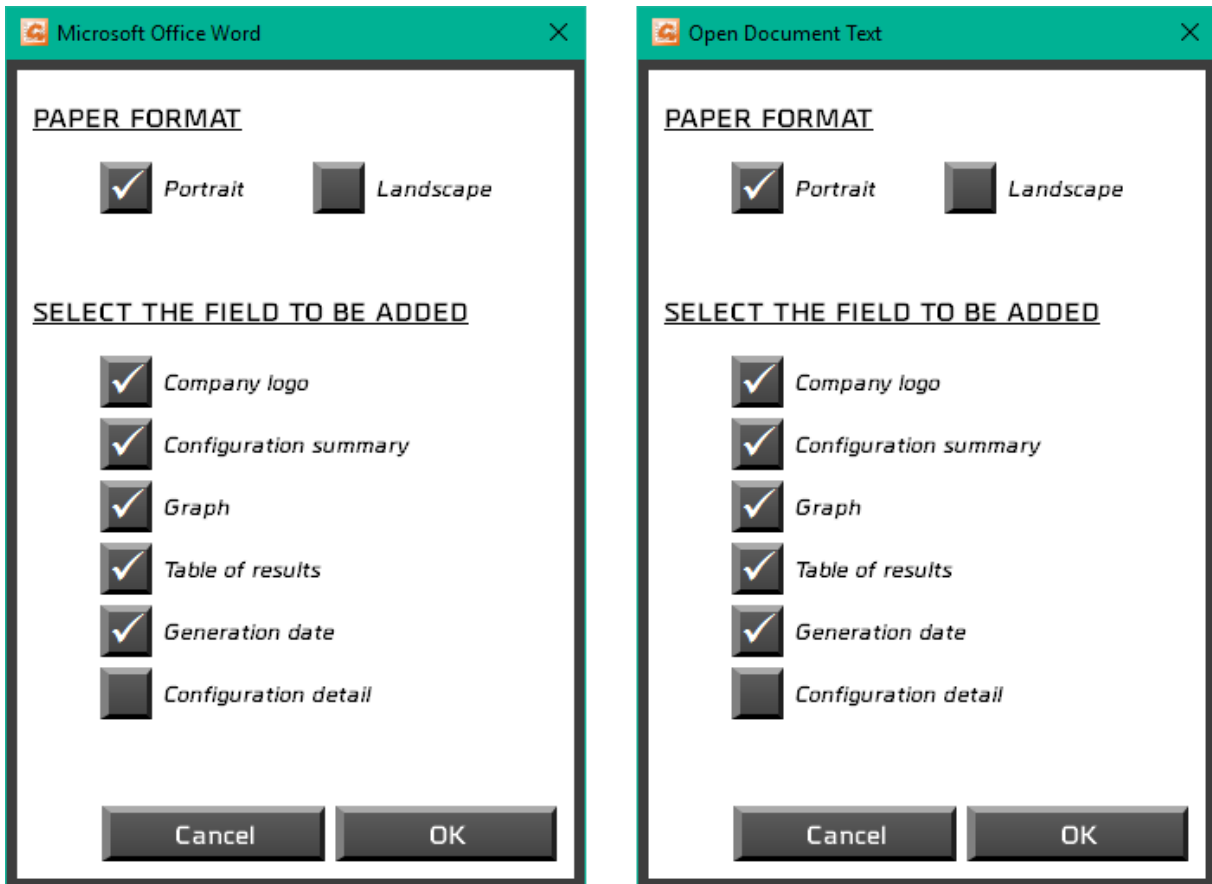
- Blank Microsoft Word document
- A Template Microsoft Word document
- Blank Open Document text
- A pdf file

Report

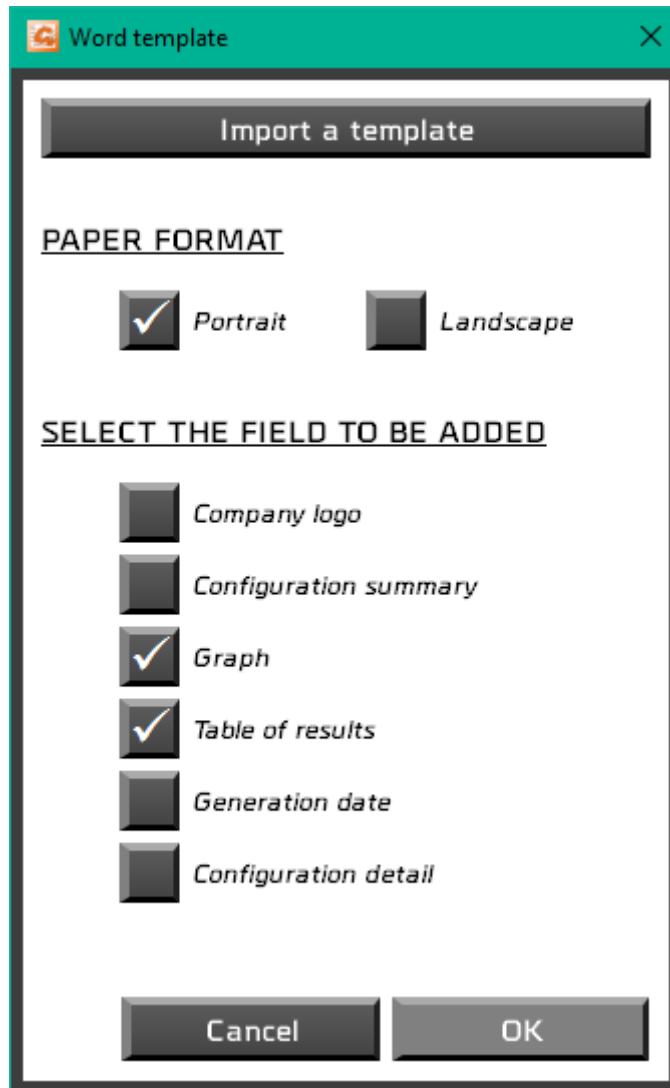
REPORT FORMAT	<input type="checkbox"/> <i>Microsoft Office Word</i> <input type="checkbox"/> <i>Word template</i> <input type="checkbox"/> <i>Open Document Text</i> <input checked="" type="checkbox"/> <i>PDF</i>
	Report setup
AFTER EACH TEST	<input type="checkbox"/> <i>Create a pdf report</i> <input type="checkbox"/> <i>Automatically print the report</i> <input type="checkbox"/> <i>Ask to print the report</i> <input checked="" type="checkbox"/> <i>Don't print the report</i>
REPORT NAME	<input checked="" type="checkbox"/> <i>Prefix "report"</i> <input type="checkbox"/> <i>Test setup name</i> <input type="checkbox"/> <i>Part number</i> <input checked="" type="checkbox"/> <i>Date</i> <input checked="" type="checkbox"/> <i>Time</i>

At the end of each test, you can also automatically generate a pdf report. So, for example you can choose to generate an automatic pdf report at the end of each test and use the Word report during analyzing.

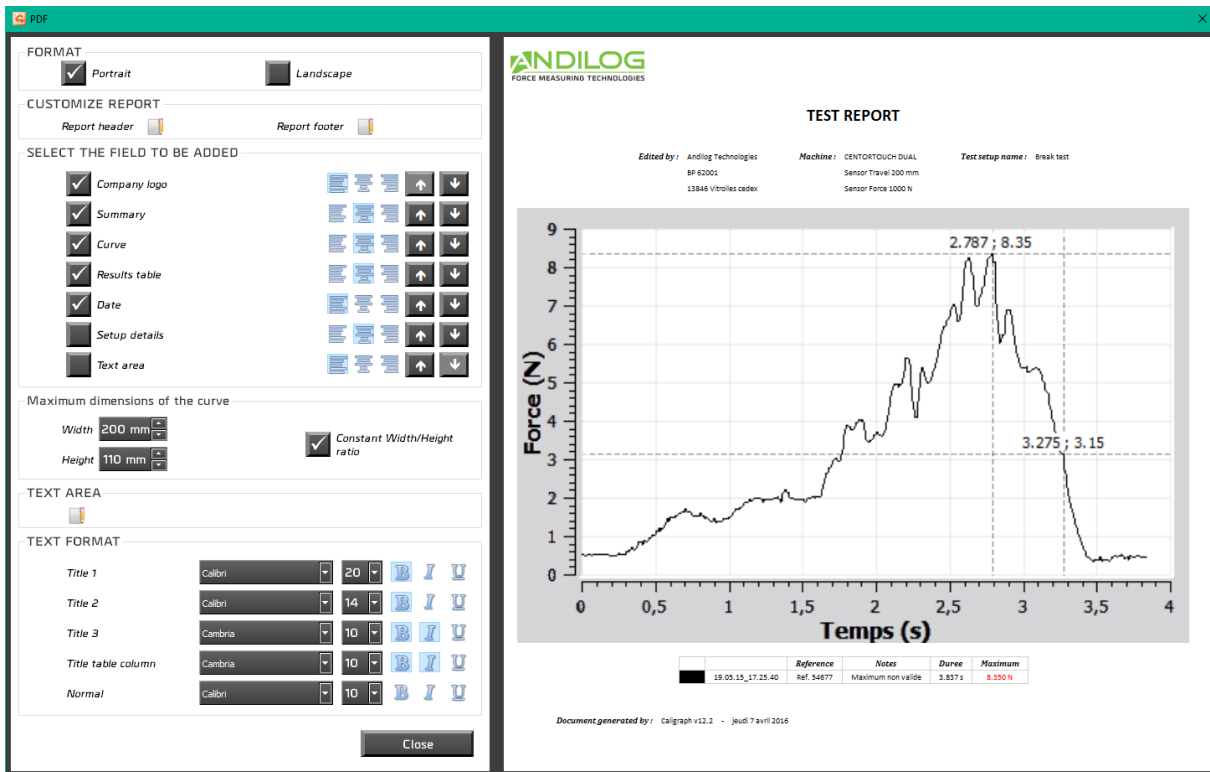
In each type of report, you can choose to display the following information:



If you choose a **Word template**, you will have to select your Microsoft Word template file (dot or .dotx file). A copy of your file will be imported in your folder CaligraphData.

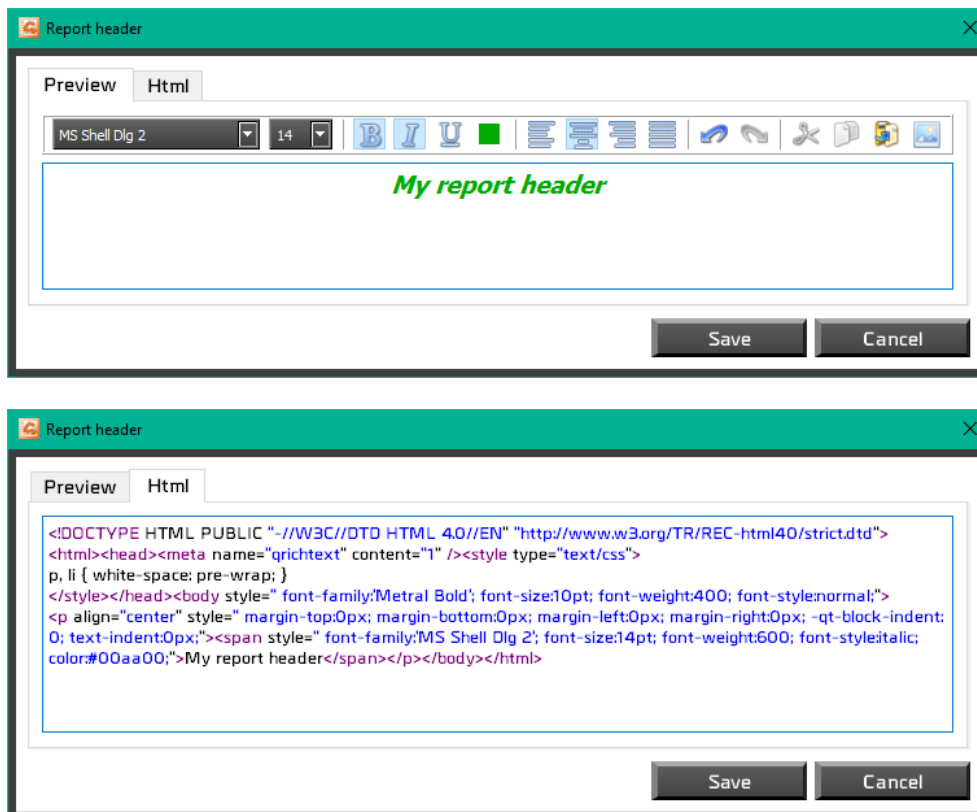


You can also customize the different element of your report using the report editor:



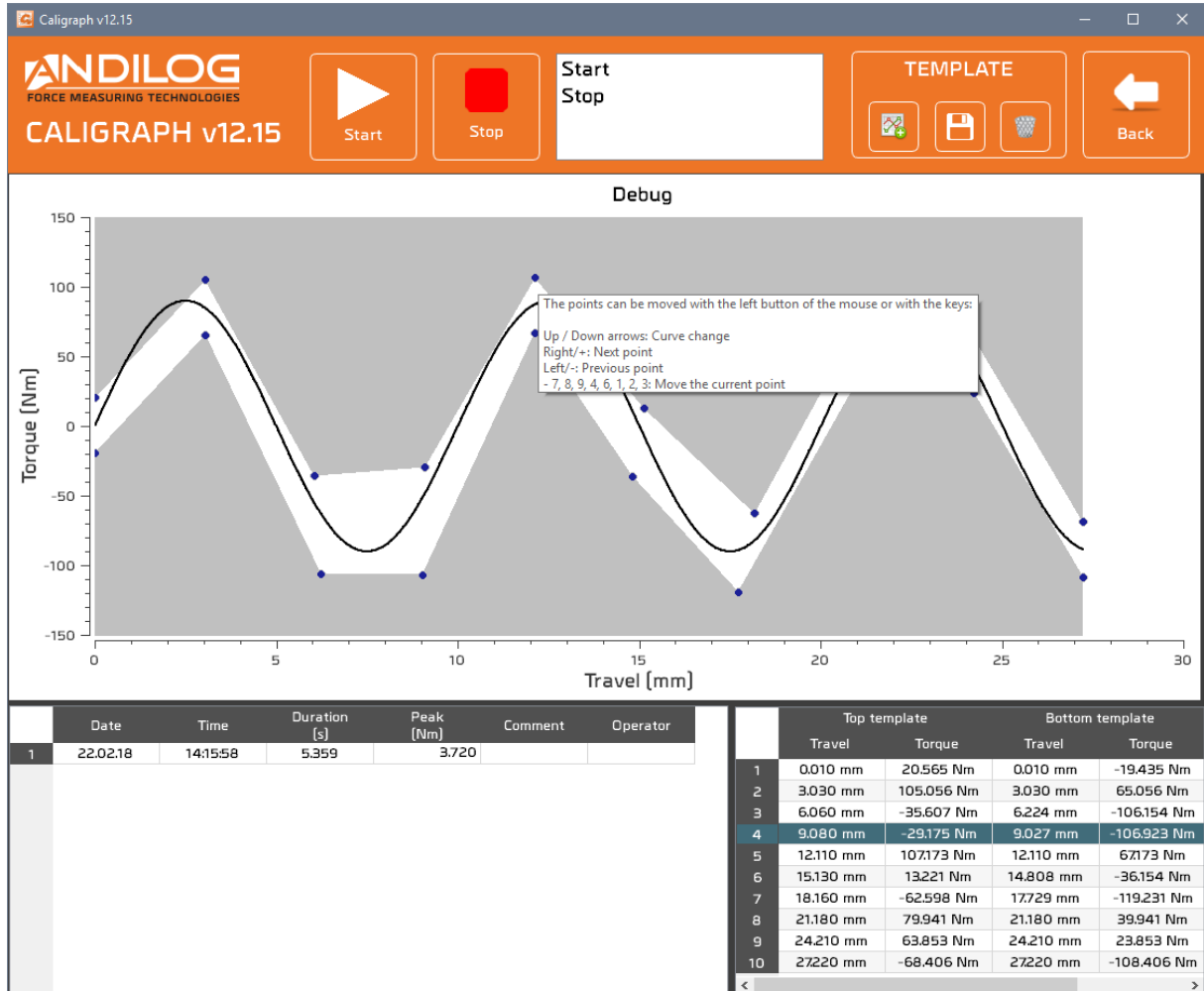
For a PDF report, you can customize all the parameters of the reports: font, font size, curve area size...

You will be able to customize the header, footer and text area of your report using an HTML editor:



6.10. Curve template

In Debug mode, you can draw a template curve for your tests.



CREATE A TEMPLATE



Automatically draw two curves for your template (10 points per curve).

SAVE THE TEMPLATE



Save your template.

DELETE THE TEMPLATE



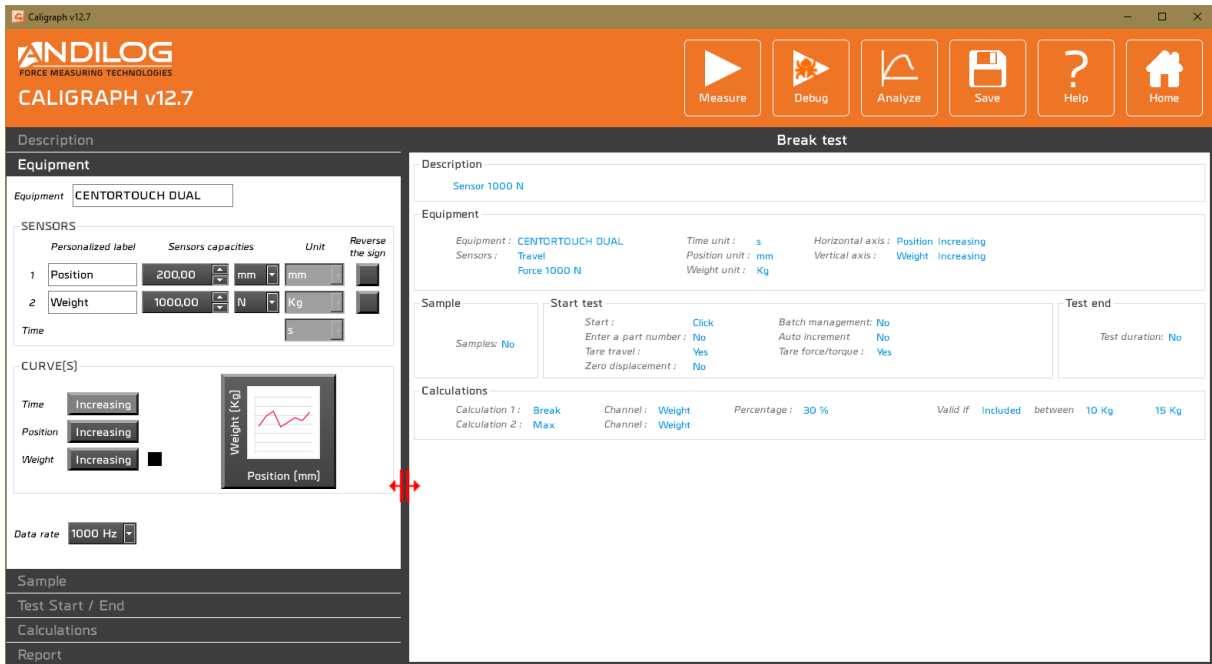
Delete your template.

You can move the different points of the template using your mouse or keyboard or from the chart at the bottom right:

The points can be moved with the left button of the mouse or with the keys:

- Up / Down arrows: Curve change
- Right/+: Next point
- Left/-: Previous point
- 7, 8, 9, 4, 6, 1, 2, 3: Move the current point

6.11. Splitter



You can use one splitter to adjust the size of the different parts.

7. Tools

7.1. License activation

Activation

This version will expire in 24 days

Evaluation key

Licensed to

Activation key





Access to this sub menu is available if the demonstration license is valid and not expired. From this window, you can choose to activate (by filling the license and activation key number) your license or ask for an activation key.

7.2. General settings


This part is only available for Administrators.

General settings

LANGUAGE

 French
  English
  Spanish
  German

FOLDERS

Path 



Automatic backup

COMPANY

Name

Address

LOGO

LICENSE

License type

For

DISPLAY TEST RESULTS

Chronological order
 Reverse chronological order

KEYBOARD

Use virtual keyboard

LANGUAGE You can choose which language is used.

FOLDERS This field recalls the location of the directory for report files (including results and saved test setup). Default, each test results are saved automatically, unless you the check box is not ticked and so after each test, Caligraph will ask you if you want to save it or not.

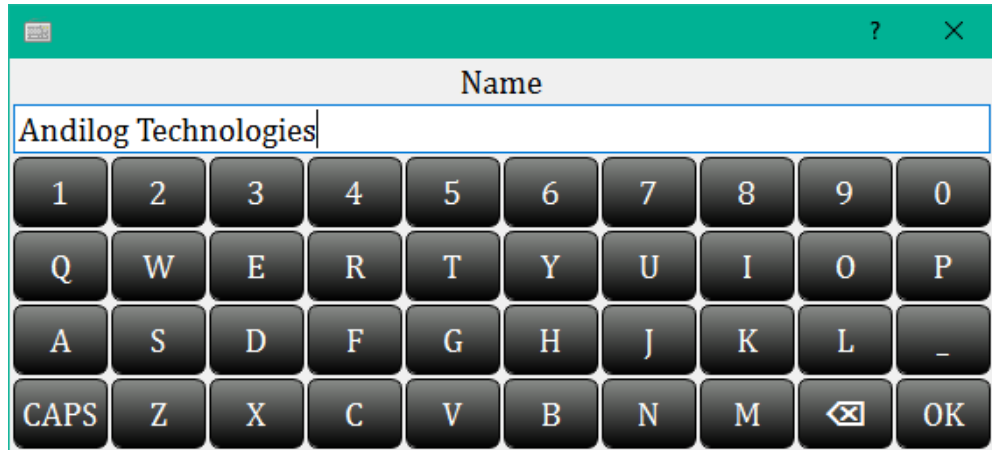
COMPANY Your company details (recall on the test report).

LOGO Logo displayed on the reports.

LICENSE Information regarding your Caligraph software license. It can be “Evaluation” or “Final” and so it is linked to a person or a company.

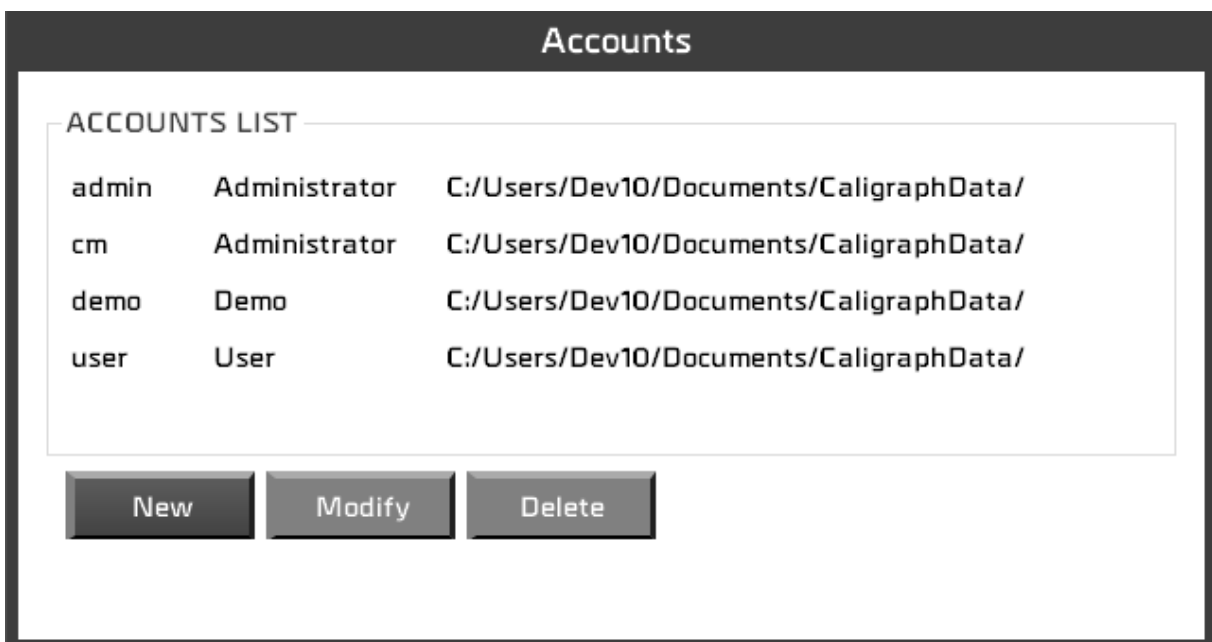
DISPLAY TEST RESULTS Choose either you want to organize the library of results by chronological order or reverse chronological order.

KEYBOARD Display a virtual keyboard.



Each change on this dialog box saves automatically.

7.3. User accounts



You can:

NEW Create a new user.

MODIFY Change user details.

DELETE Remove a user account.

You cannot delete your account or change your access level.

For each user, you can define the following parameters:

LOGIN Login

REPOSITORIES Path to the storage location of the files (test setup and results).
Choose to enable the automatic backup of the tests or not.

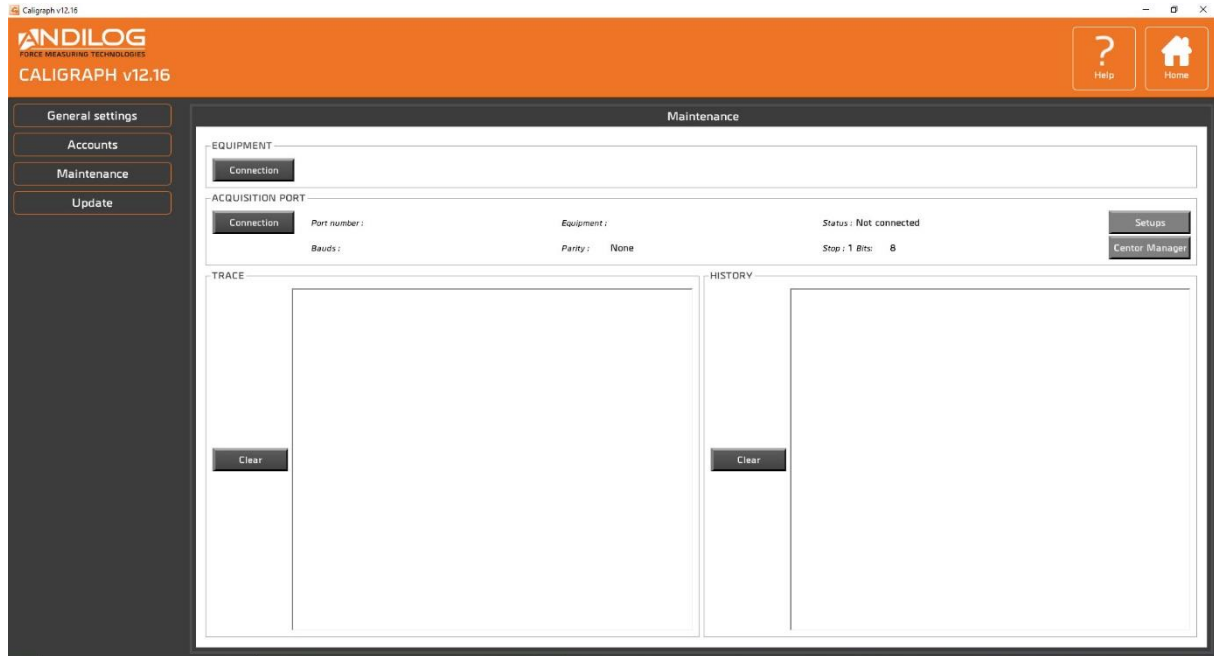
DISPLAY TEST RESULTS Select the order of display of the results

KEYBOARD Virtual keyboard

LANGUAGE Language

7.4. Maintenance

This dialog box will give you more information on the communication setting with your test equipment.



EQUIPMENT Capacity information from the Centor since the latest connection.

Connection

Search for a compatible equipment connected to the computer.

ACQUISITION PORT COM Port used by the Centor, and its settings (bauds, parity...). The software version of the Centor and its connection status.

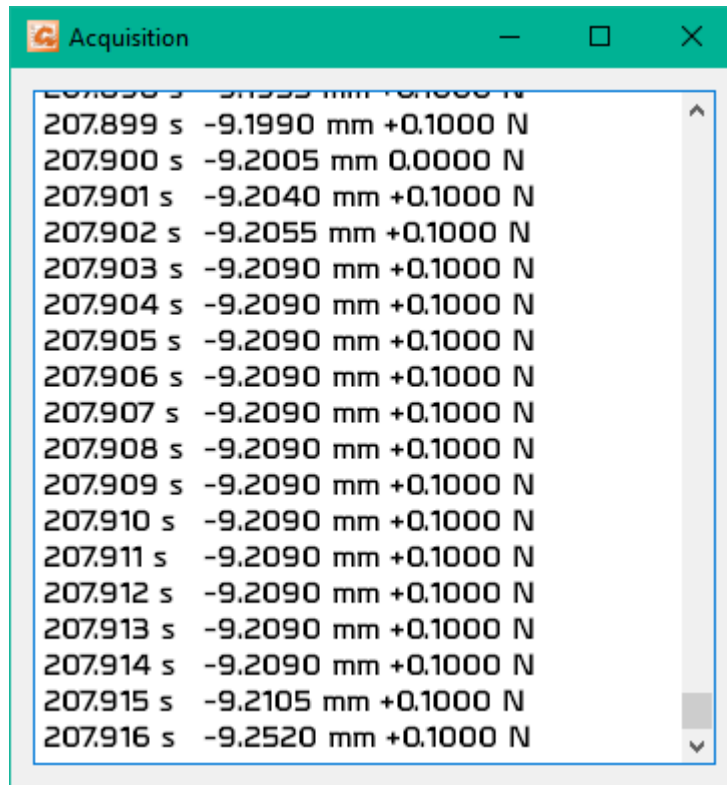
Trace view

According to the connection status, the button will display different available action:

- Status « Not connected »: action « Connection »
- Status « Connection in progress»: no action available.
- Status « Connected »: action « Trace view »
- Status « Failure »: action « Re connection »

The difference in between “connection” and “re connection” status is linked to the COM port argument. The “re connection” action will use the set COM port as selected at the time of the first connection, while the “connection” action will look for all available COM ports on your computer. Then for both actions, Caligraph software is checking the parameters of the Centor, and in case of error will advise you for a change.

Here is an example of the “trace view” acquisition dialog box.



Once the connection is set with a CENTOR TOUCH, Califort disables access to this menu. If you need to, you can still reactivate them with a right click, or by turning OFF and ON the Centor Touch.



You can save or load a setup in your equipment.

TRACE

Follow the connection status.



Remove history from the window.

HISTORY

Library of all error/failure messages and status.



Remove history from the window (only available for administrator account).



You can access to the maintenance of your equipment to change: the next calibration date and reset the overload counter. When you change something in these parameters, your equipment will automatically restart.

Remark:

Alternative connection problems can happen sometimes (loosing connection and immediate re-connection, for example) – unplug your USB cable from one port to another available one can solve this issue.

7.5. Update

If your computer is connected to Internet, you can update your software to the latest available version. Only Administrators accounts can access this feature.

8. Save your data

In the folder « CaligraphData », you can find all the raw data, reports and test results of your projects.

_BACKUP Copy of deleted files and project

_BACKUPV4 Copy of files of the previous version of Caligraph.

_TEMPLATES Imported templates

Each project contains 3 folders:

SETUP Caligraph saves the test setups with a filename “configuration name.ini”. For security purpose, a backup is saving your test setup every ten launch of the software and saved under “C:\Caligraph configuration”

MEASURES Raw data (curve)

REPORTS Reports
