UNIVERSAL MACHINE

User Manual

TOPFIBRA

EFFECTIVE FILAMENT WINDING® PIONEERS

UNIVERSAL MACHINE

USER MANUAL

TABLE OF CONTENTS

1. GENERAL SETTINGS

The latest new generation universal test software is designed to perform drawing, strain, pushing, bending and fatigue tests easily. New generation test software helps you to perform your tests quickly with its user-friendly interface and easy usage.

1.1. Main screen

The fundamental buttons and night/day outlook settings are presented below:

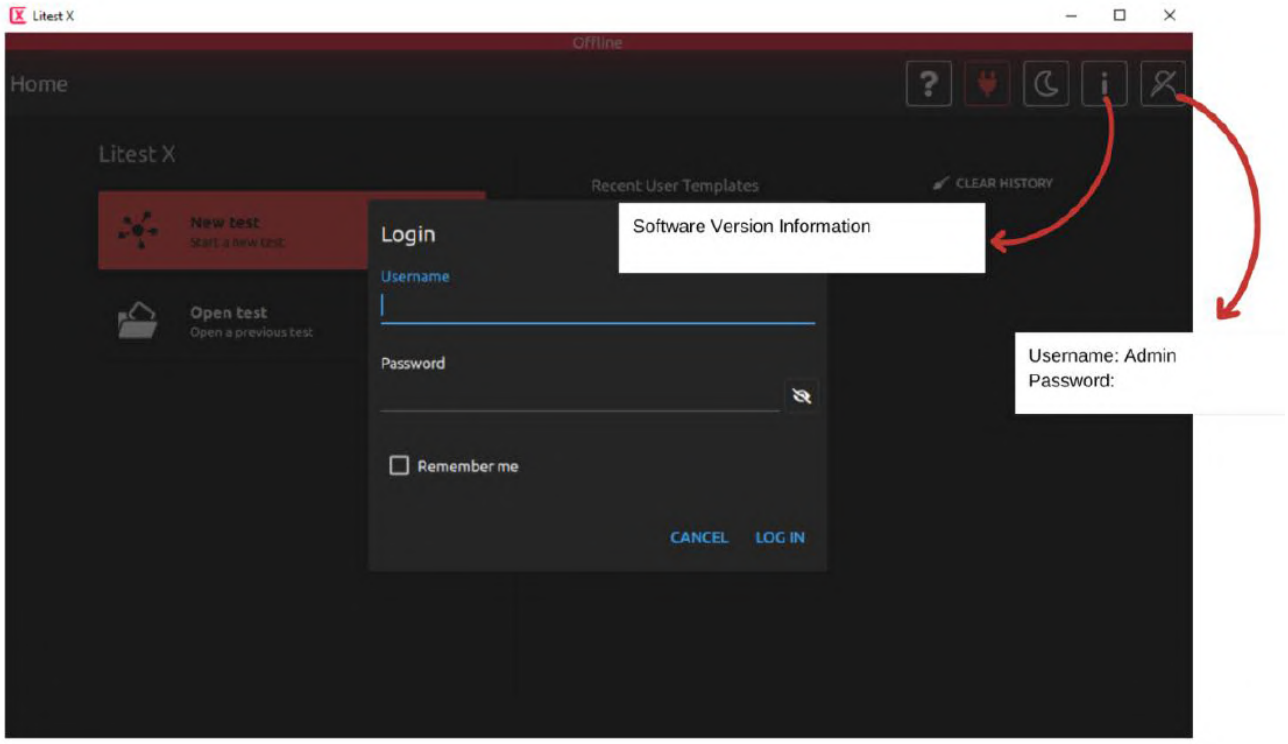


Figure 1

1.2. Admin panel

The default settings for starting are:

- Username: admin;
- Password: admin.

The machine automatically connects to the device; if it is not connected, then click the button below:

Figure 2

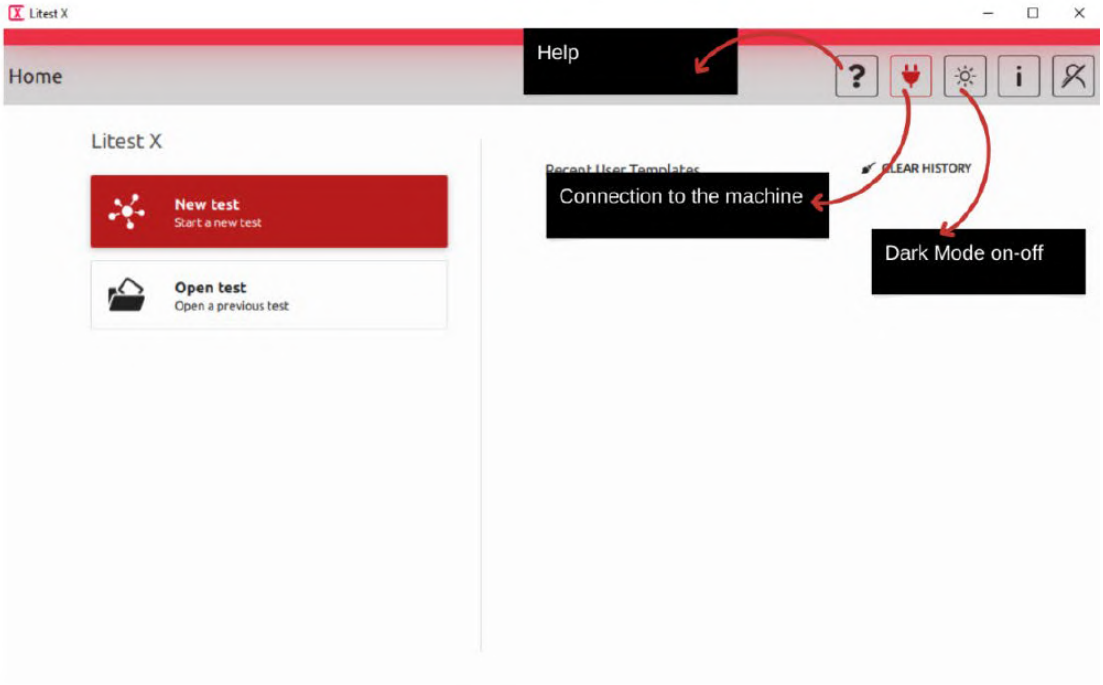


Figure 3

1.3. Test importing

On the top right corner, click the import button and select a relevant file from your device.

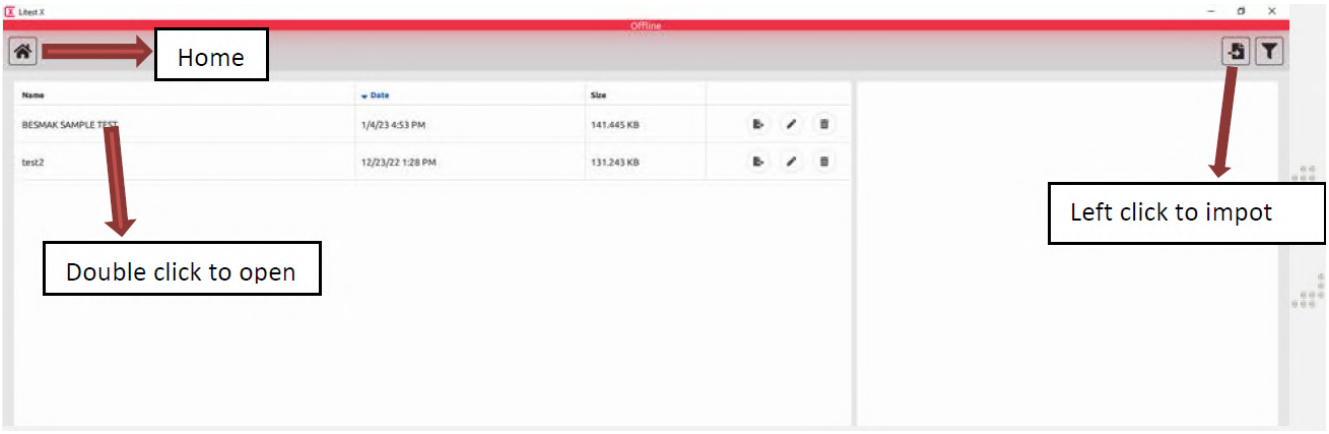


Figure 4

The files after selected will appear on the board. To run it double right-click on the relevant important test.

1.4. Main outlook

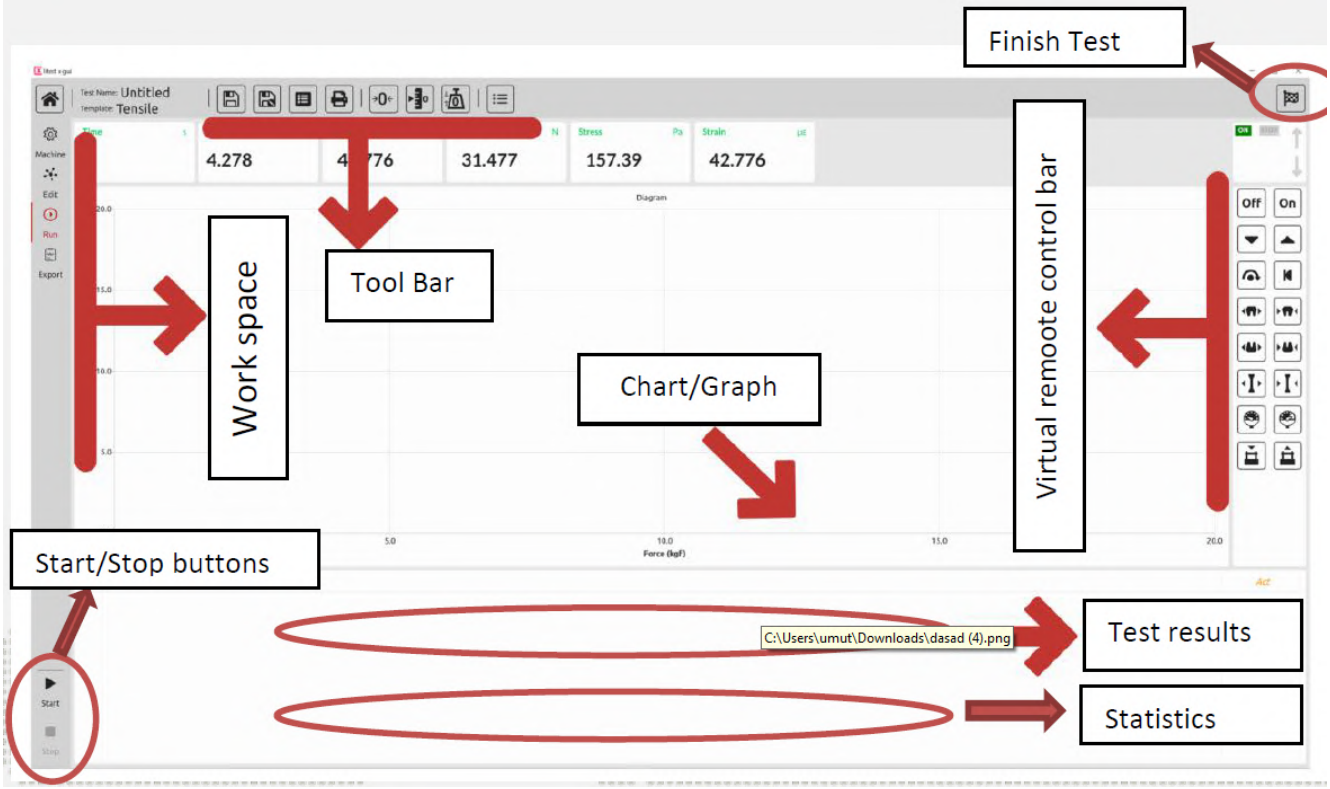


Figure 5

After importing any test or starting a new one, the screen will appear with this main bar on top. Each of the buttons in the top bar is illustrated below:

Save

Save as

Export

Print

Zero crosssection

Zero extension

Tare force

Log

2. TEST SETTINGS

On the main screen, machine, edit, run and export tabs are placed on the left. Each of them has their own sub-bars next to the right. They are explained below by order.

2.1. Machine settings

In this tab General, RMC (Remote Control) and Sensor Mapping are located.

2.1.1. General machine settings

Here user can enumerate the machines and select the destination mode.

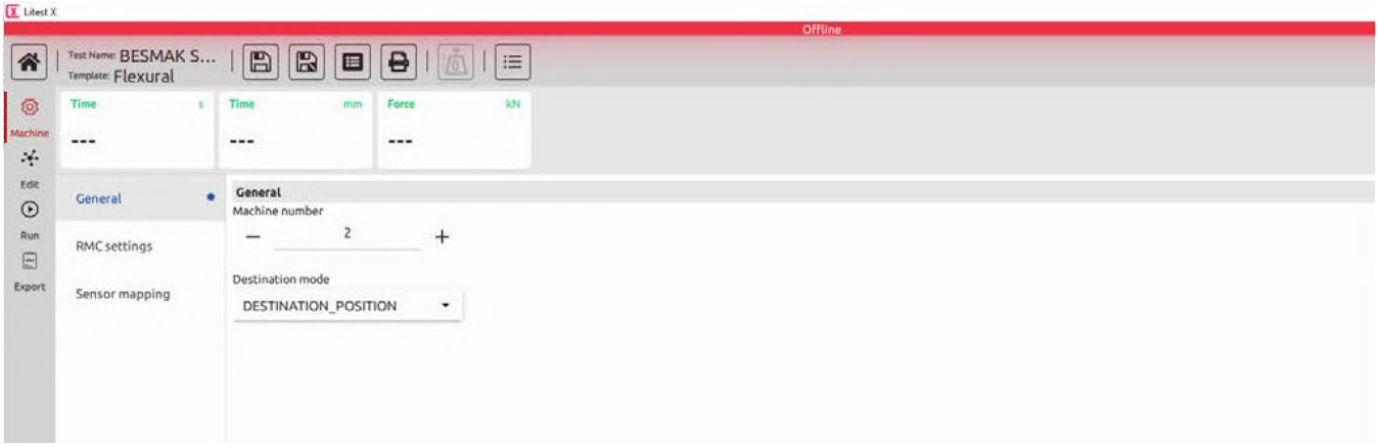


Figure 6

The user can set up machine settings with General, RMC (Remote Control) and Sensor Mapping. In the RMC tab user have a preference of settings manually. If the manual button gets turned on there can adjust close loop speed.

2.1.2. Remote control settings

In RMC (Remote Control) Settings, the Test type can be done as a closed loop and open loop. When the manual tab is enabled, closed loop and open loop speeds can be entered.

In the same section, Xhead Action can be set up DoubleAct, SingleActup and DoubleActdown.

To change units, such as from N to kN, go to the Remote Control (RMC). Display options as illustrated below.

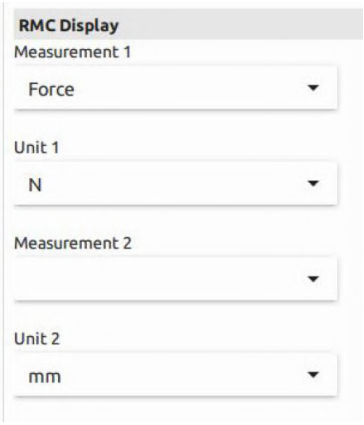


Figure 7

2.1.3. Sensor mapping settings

Sensor Mapping Force could be used, as shown below.

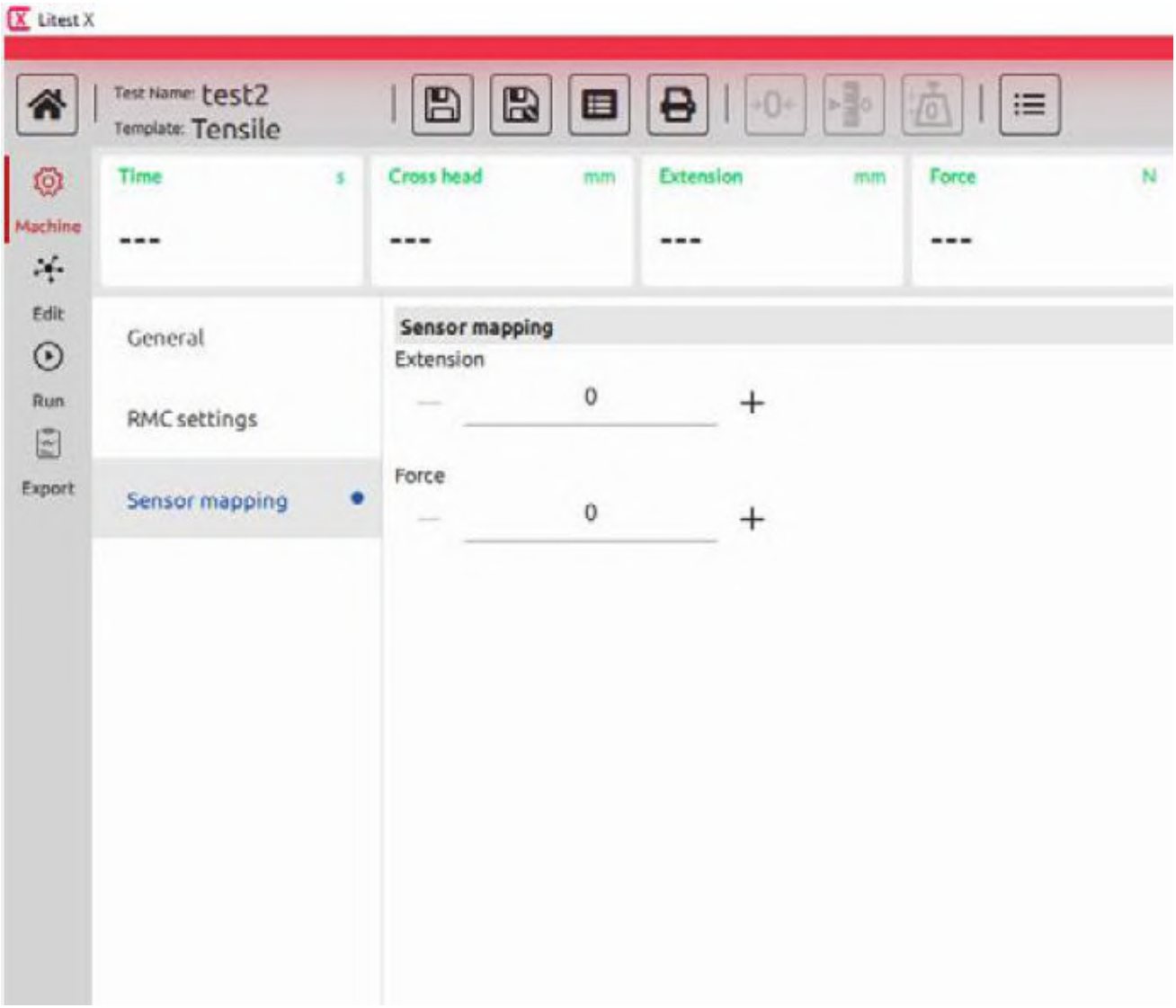


Figure 8

2.2. Edit settings

2.2.1. Method creation & parameters

In the edit section, there are general, user parameters, specimen, measurements, test procedure, results, statistics, live display, diagrams, reports, close-series settings, and flexure sub-tabs.

The user could enter a description for the test in the General tab, as shown below.

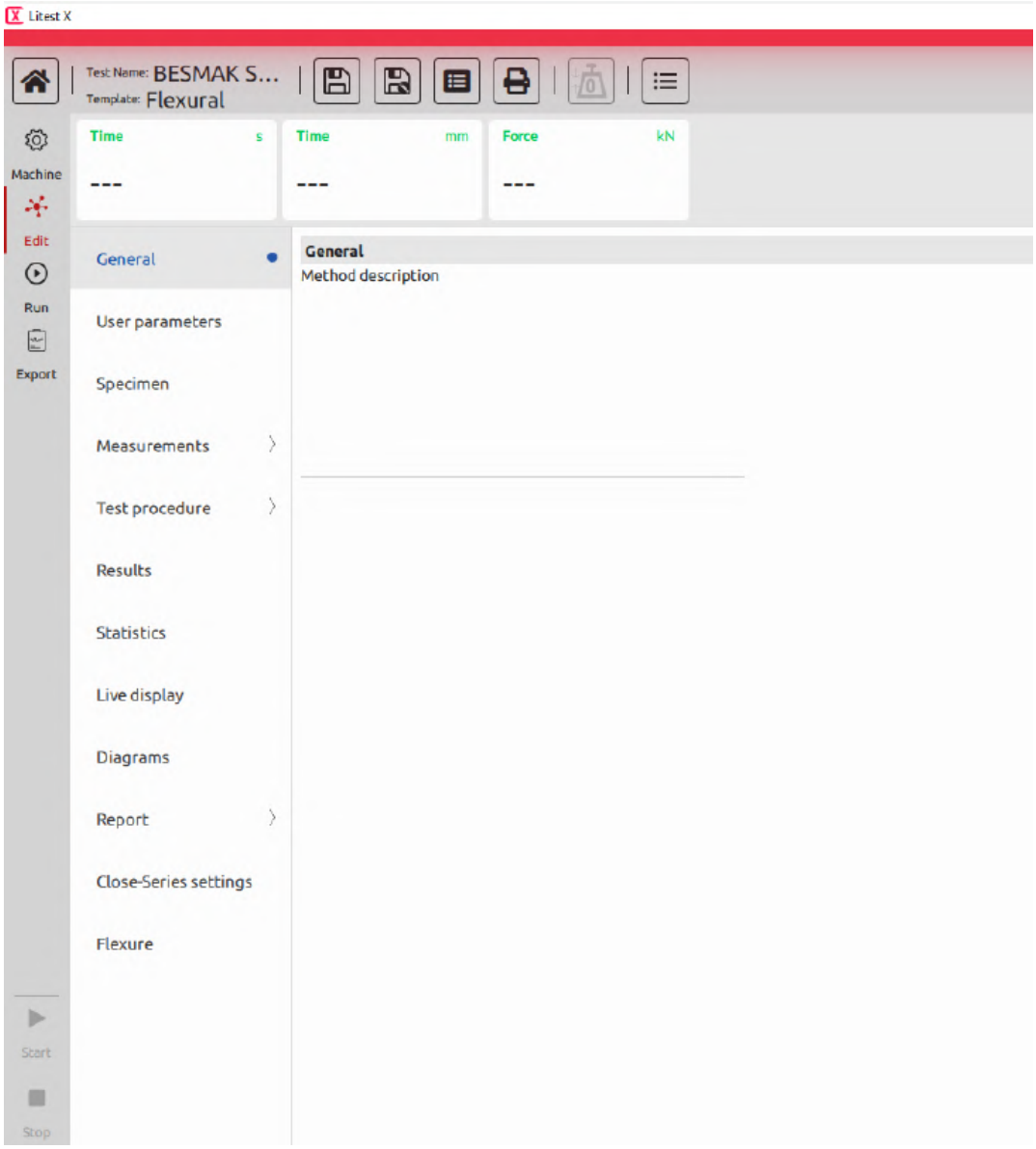


Figure 9

Users can add numerical, integer numerical, text, and boolean values to the User Parameters tab, as shown below.

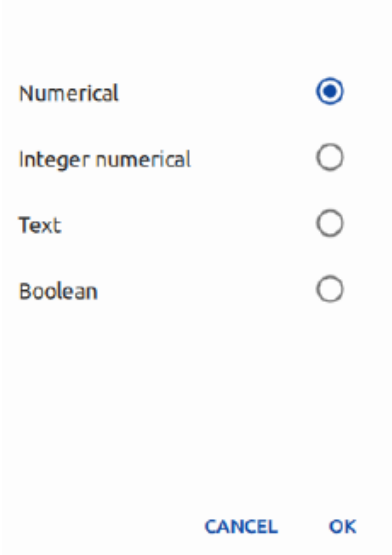


Figure 10

2.2.2. Specimen data input

Sample data can be entered in the specimen tab, such as dimensions and specimen type (flat or cylinder).

If you activate the 'get initial dimensions before each test' roll, then the machine will automatically bring a pop-up screen to ask for your specimen's initial dimension. The same setting process is valid for the final dimensions.

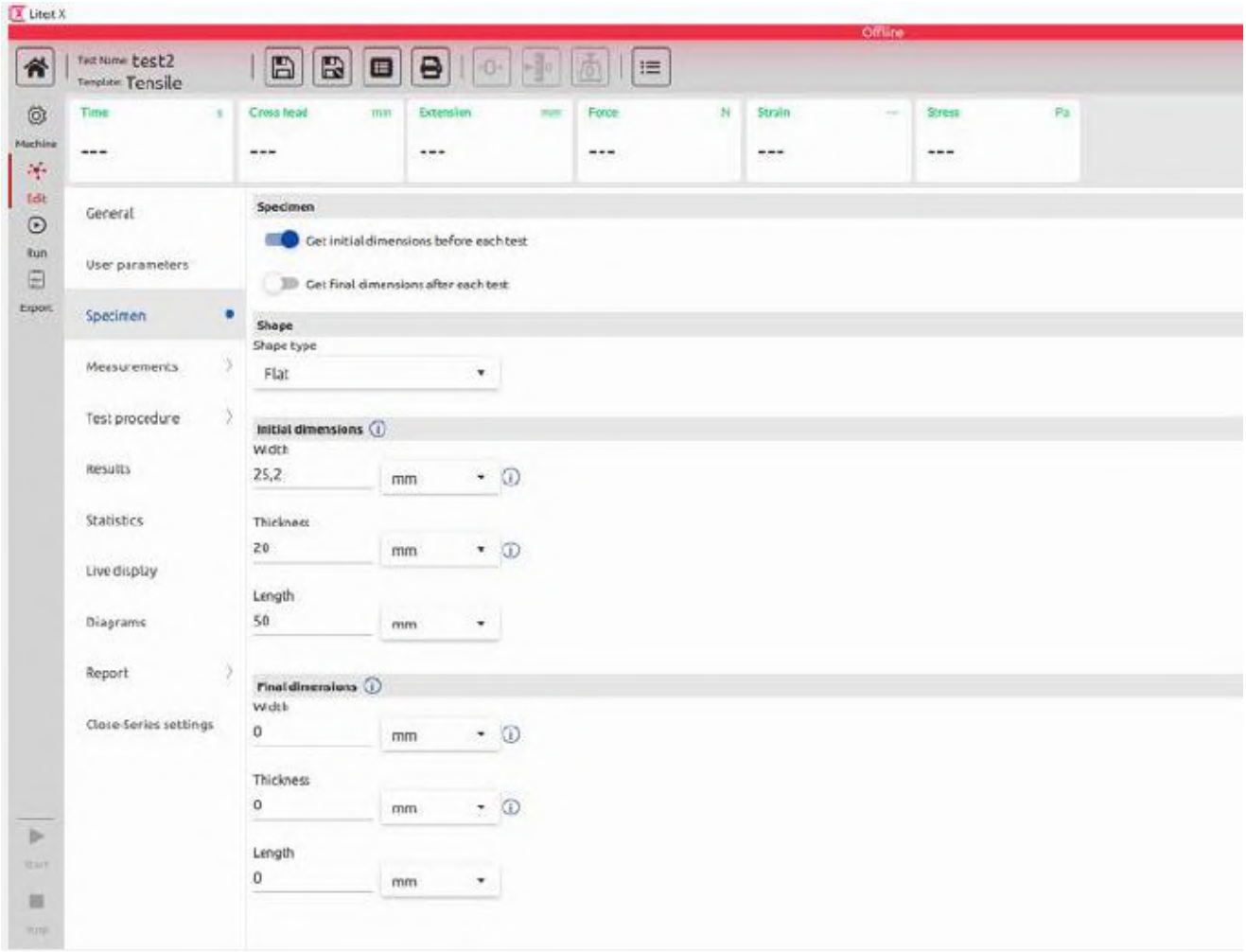


Figure 11

2.2.3. Parameter naming

In the Measurement tab, the menu shows all the active sensors and parameters used in the instrument. To change the name of the parameters for example, write your new name on the name tab and it will appear on the top of the screen in yellow after re-opening the test file.

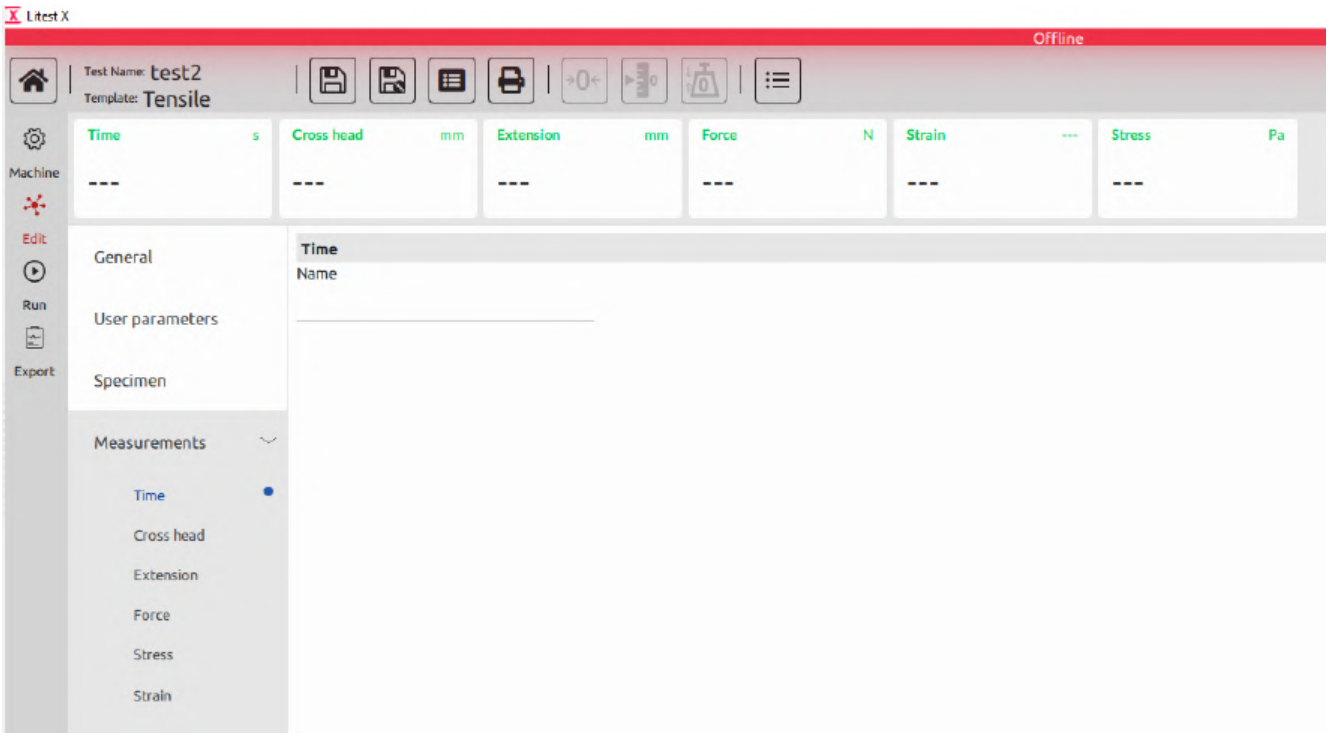


Figure 12

2.2.4. Test procedures

In test procedure tabs, there are pre-test, post-test, data acquisition, events and tests subtabs as illustrated below.

2.2.4.1. Pre-test data

From the Pretest subtab, the user can activate the preloading option. By activating preloading, the user could add cross head, extension, force, stress, strain presetting speed and destination controls before the test starts.

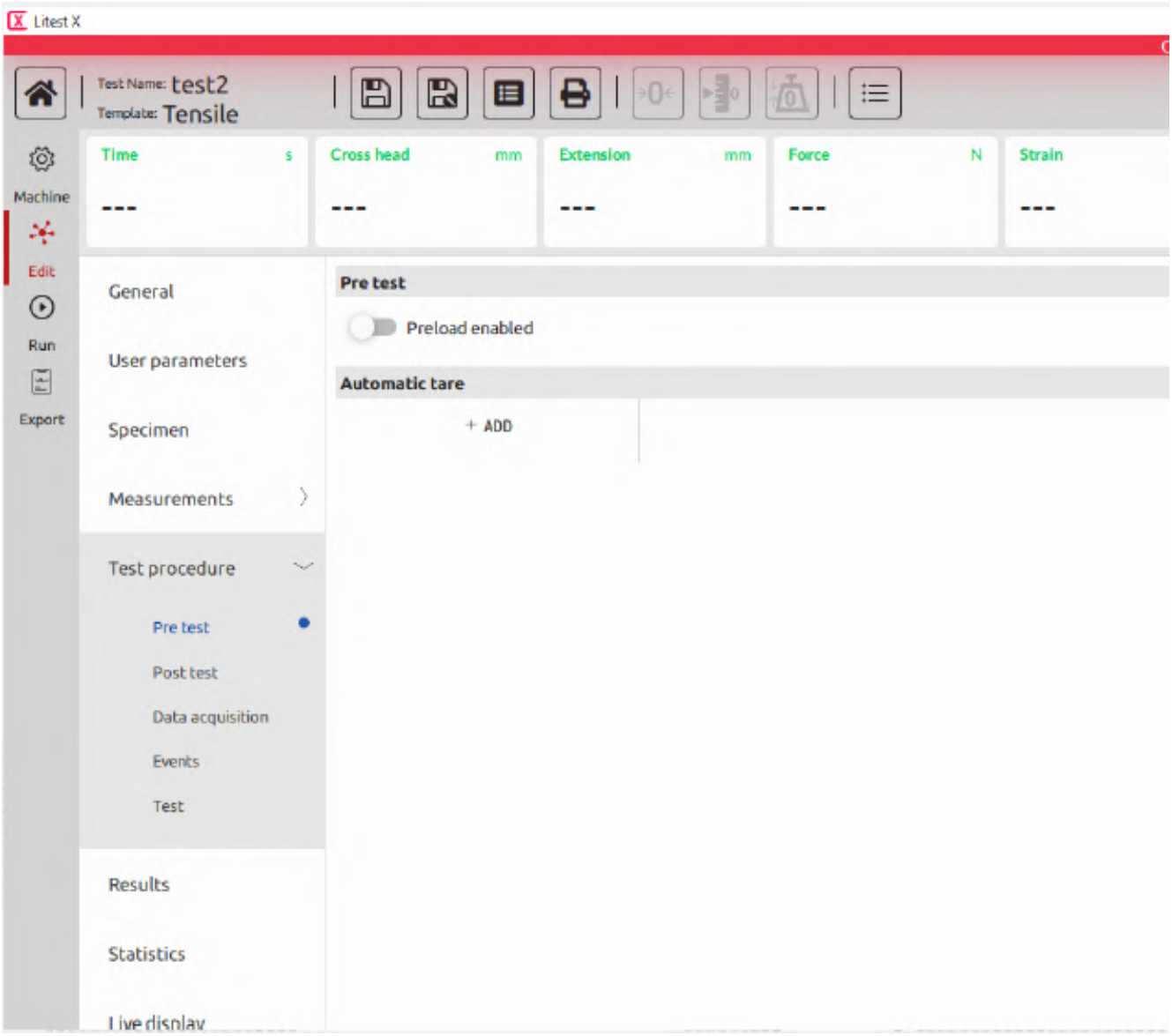


Figure 13

In the same subtab, the user also assigns an automatic tare cross head, extension and force and it allows to delete of data.

2.2.4.2. Post-test data

From the Post-test subtab, prompt by action can activate and operation could set as a return to and operation could setting as a return to zero.

2.2.4.3. Data acquisition

From the Data acquisition subtab, the user can define limitless sample intervals.

2.2.4.4. Event & test setting

From the Events subtab, a break detection option could be set up.

For example, if a user wants to stop the test after a 20% drop in the fracture point, as shown in the image below, this option can be assigned.

Break detection serving many different purposes is also greatly helpful to protect the user's extensometer if there is one in the test.

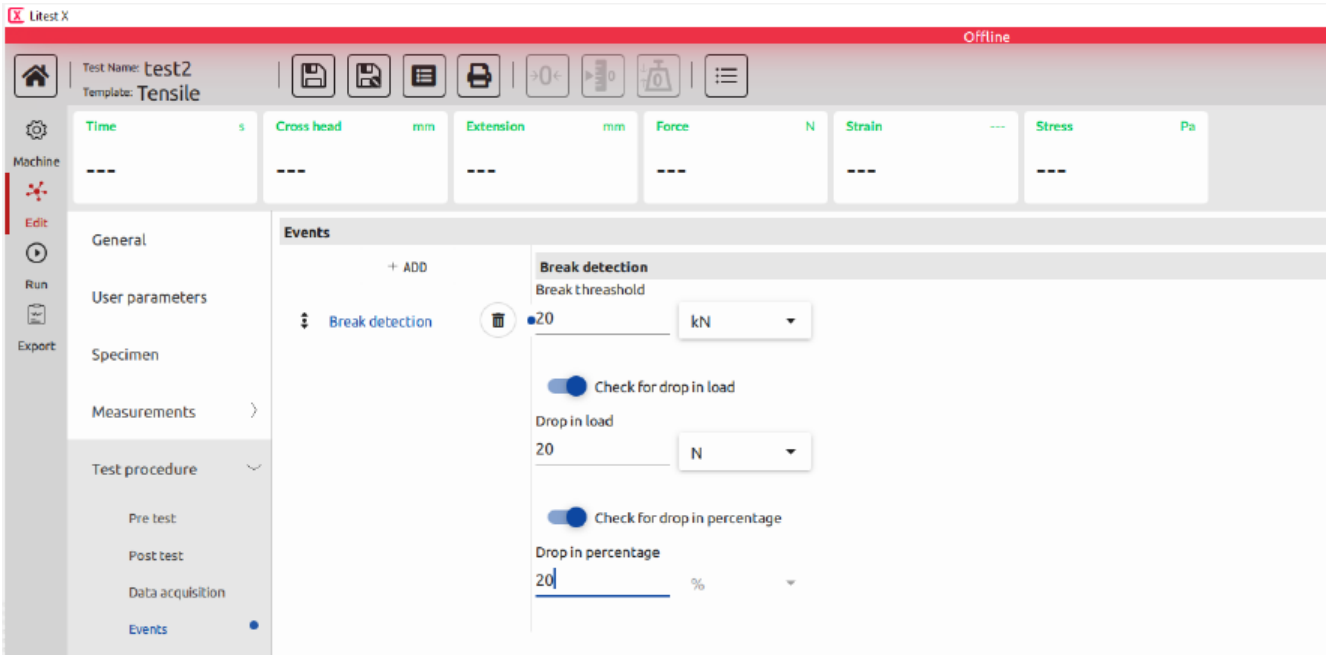


Figure 14

From the Test subtab, the speed for cross head, force, stress, and strain would be defined as illustrated below.

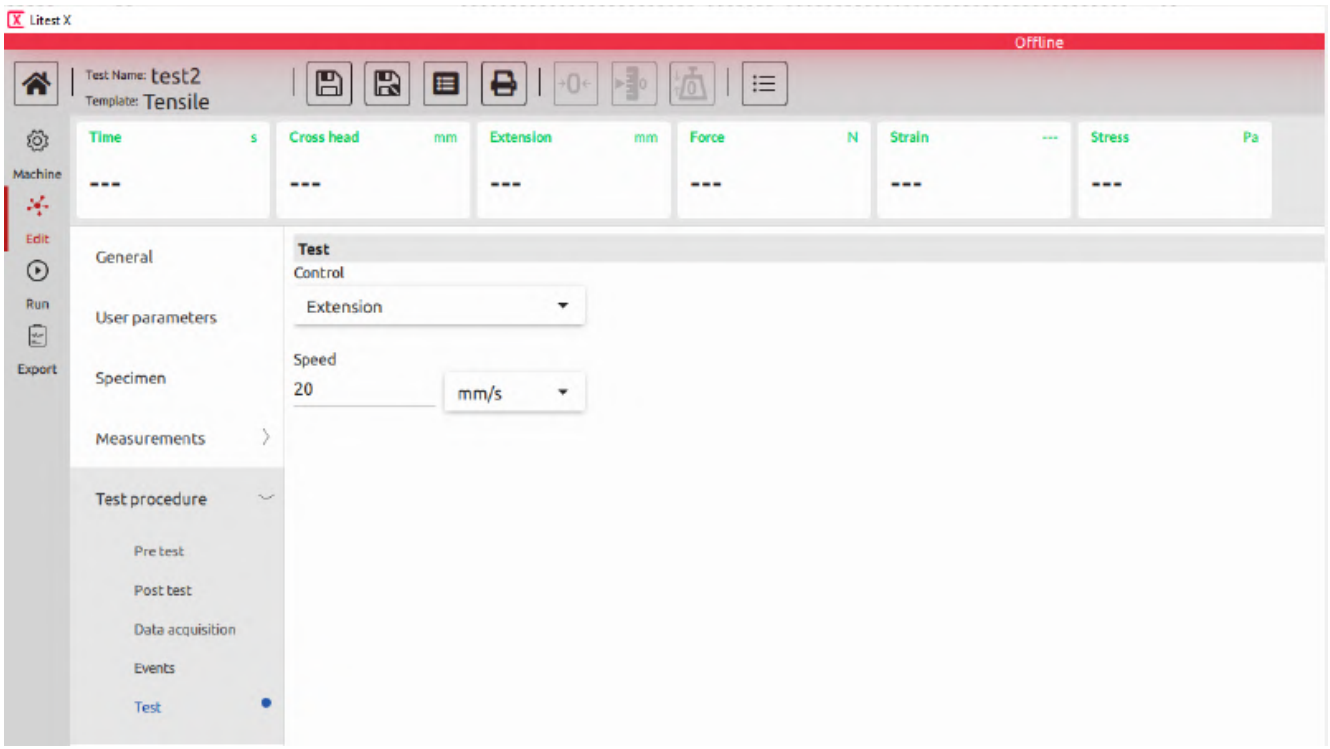


Figure 15

2.2.5. Results

From the results tab, E modules, Yield point, Energy, Maximum/ Minimum, Breakpoint, Value index, and Area reduction could be added, as illustrated below. For each of these, the user can set up separate settings, which are represented by the order below.

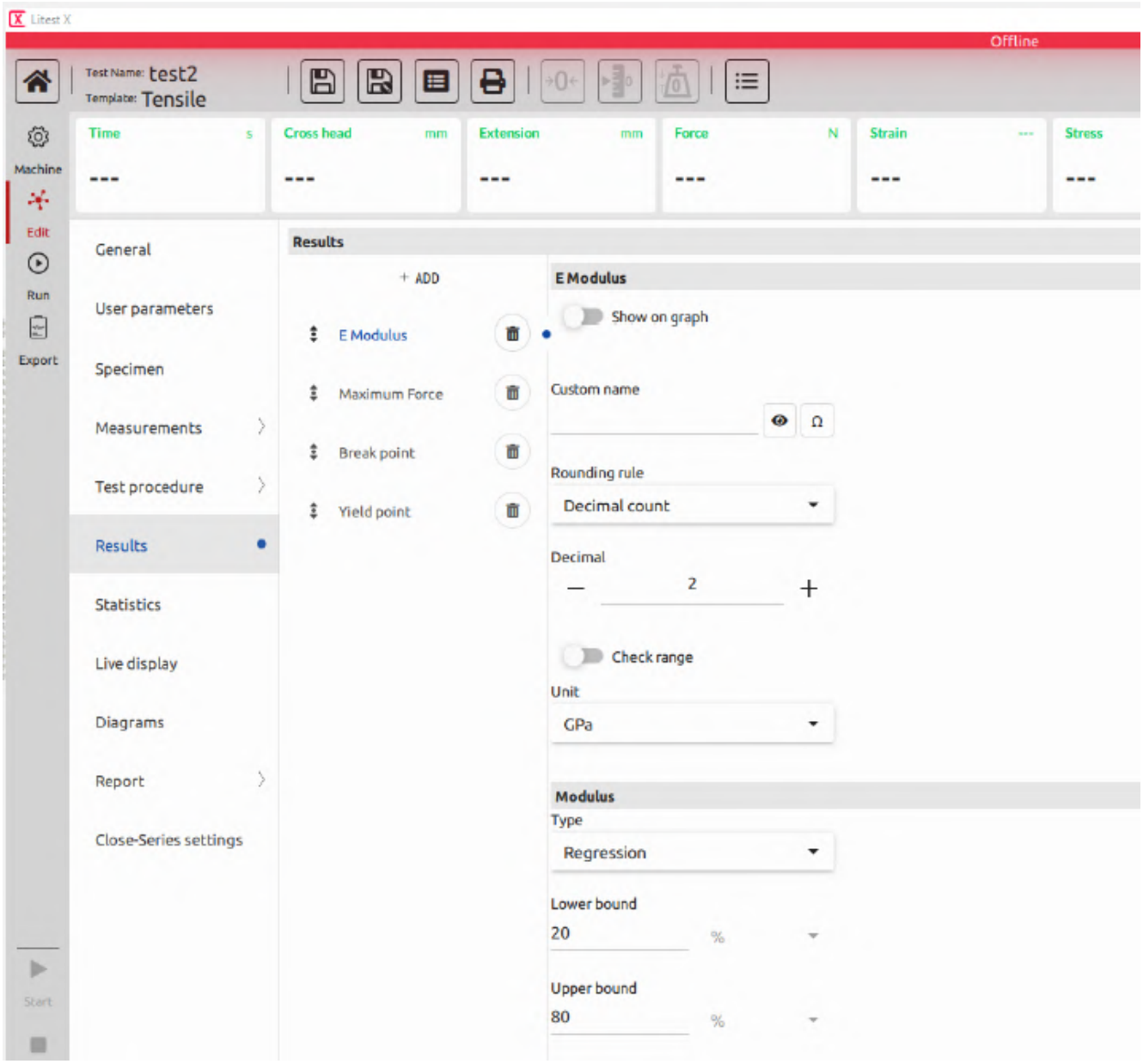


Figure 16

Rounding and decimal rules, as well as minimum valid values, can be assigned for the E modulus, and the other parameters. The number of digits of the significance value could be displayed between 0 and 7.

Secant, regression, automatic max-slope, and automatic max-linear region bounds are also assigned.

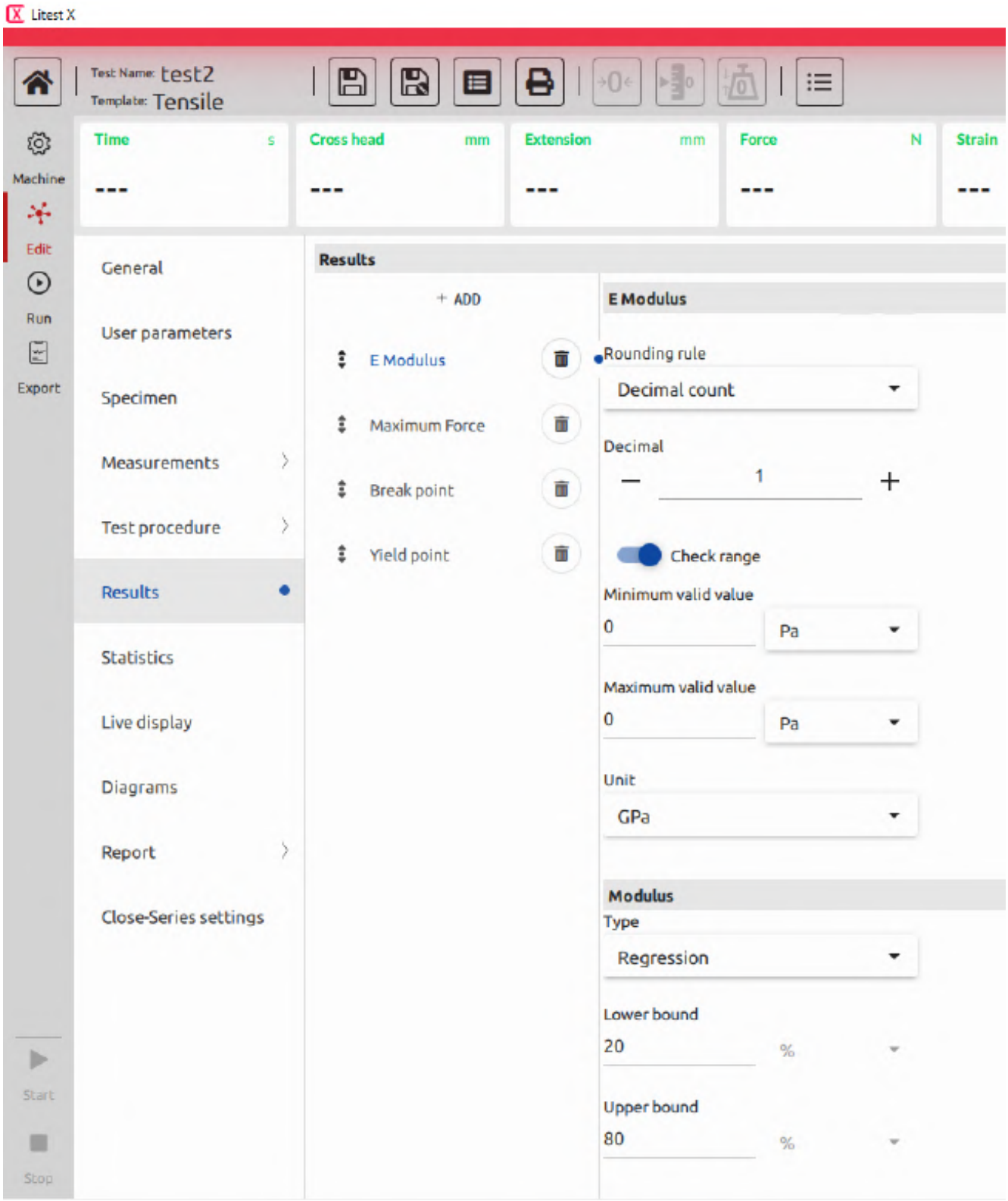

Litest X
Test Name: test2
Template: Tensile
Time s
Cross head mm
Extension mm
Force N
Strain
Machine
Edit
Run
Export
General
User parameters
Specimen
Measurements
Test procedure
Results
Statistics
Live display
Diagrams
Report
Close-Series settings
Start
Stop
Results
+ ADD
E Modulus
Maximum Force
Break point
Yield point
E Modulus
Rounding rule
Decimal count
Decimal
1
Check range
Minimum valid value
0
Pa
Maximum valid value
0
Pa
Unit
GPa
Modulus
Type
Regression
Lower bound
20
%
Upper bound
80
%

Figure 17

A similar setting could arrange for maximum force, breakpoint and yield point. Please note that for the Yield Point, the user also could assign an offset value as a percentage.

In the Results tab if you made a different setting but would like to change the order of results, no need to delete and add them according to the new order, instead just drag them over each other. An example from the above picture, just hold the left click of 'Yield point' and drag it over from 'Break point' to see it before the breaking point in the result.

2.2.6. Statistics

From the Statistics subtab, the user could automatically add average, variance, standard deviation, minimum, maximum and median.

For instance, the median allows calculating automatically averages of test results.

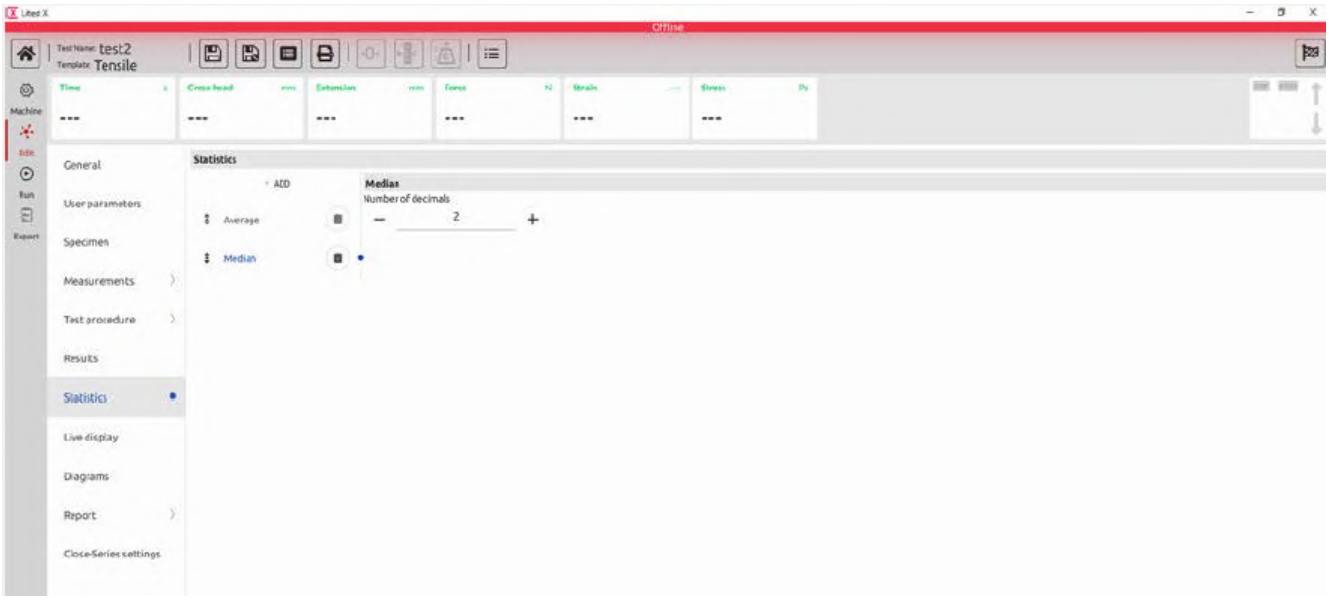


Figure 18

2.2.7. Live display options

From the Live display subtab, time, crosshead, extension, force, strain and stress could be shown instantly.

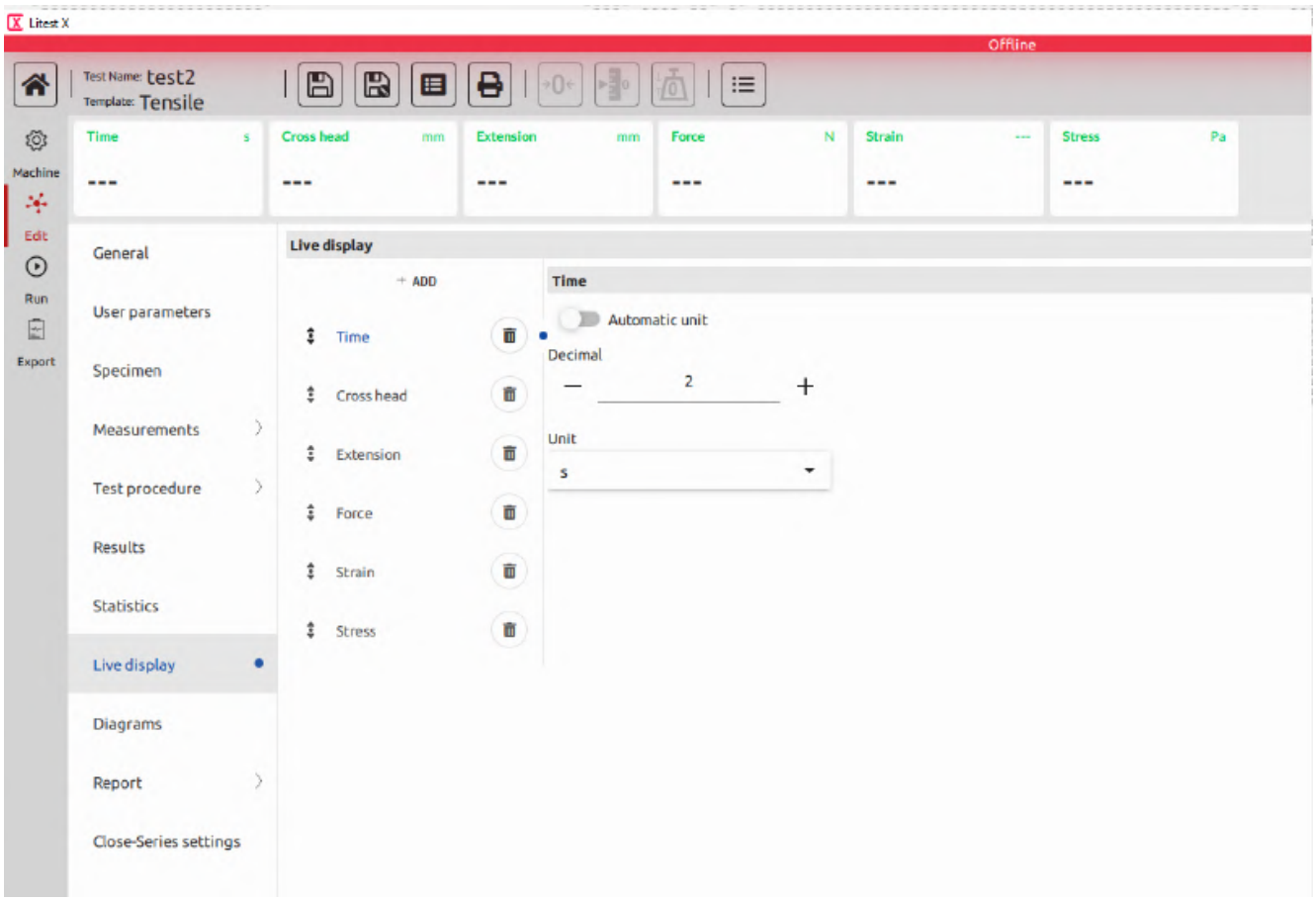


Figure 19

2.2.8. Diagram settings

Many diagram combinations can be created by users, using the Diagram tab's different six X- and six Y-axis parameter options. It should be noted that these axes can also be adjusted linearly and logarithmically. Additionally, units in the diagrams could change. The image below depicts all of the diagram settings.

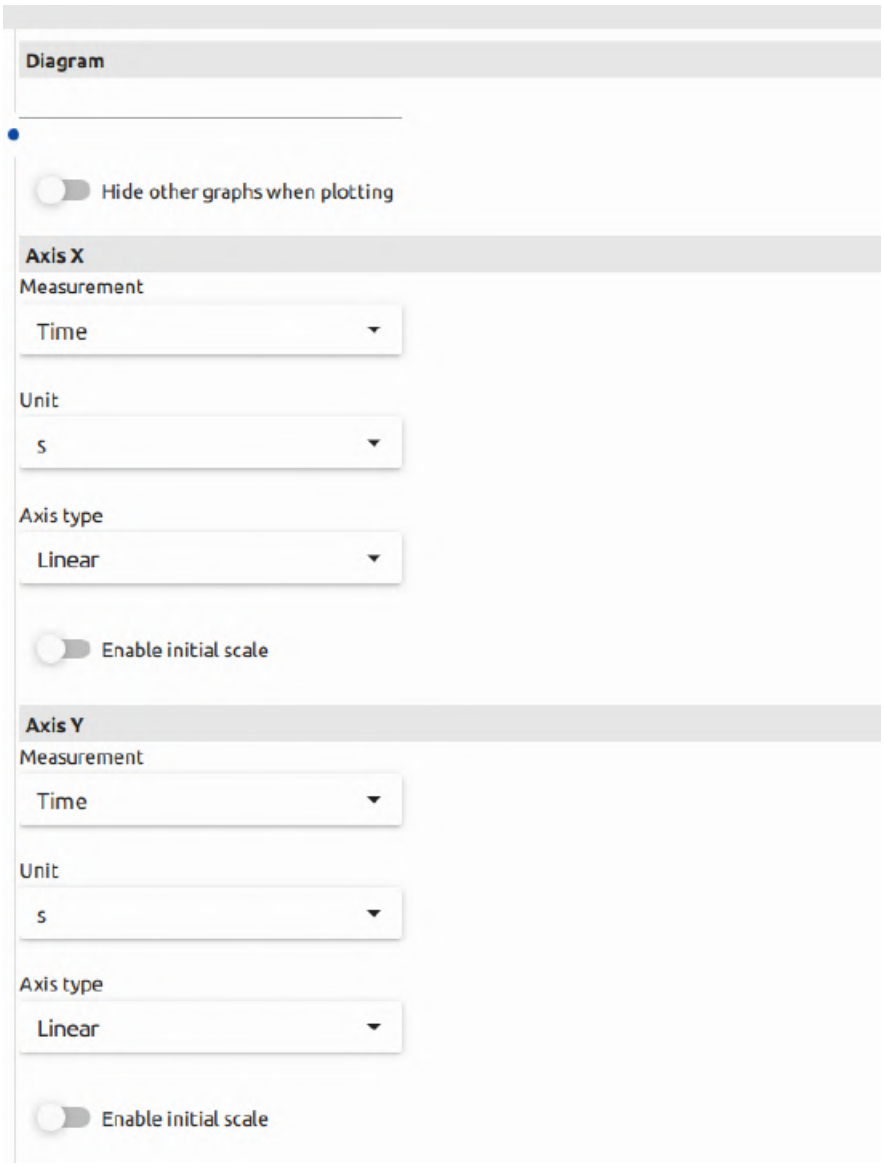


Figure 20

Also, at the end of this section, users could add initial data to their diagrams, as illustrated:

Figure 21

2.2.9. Reports

The user can define a description for their reports in the Report General section of the Report subtab, as shown below.

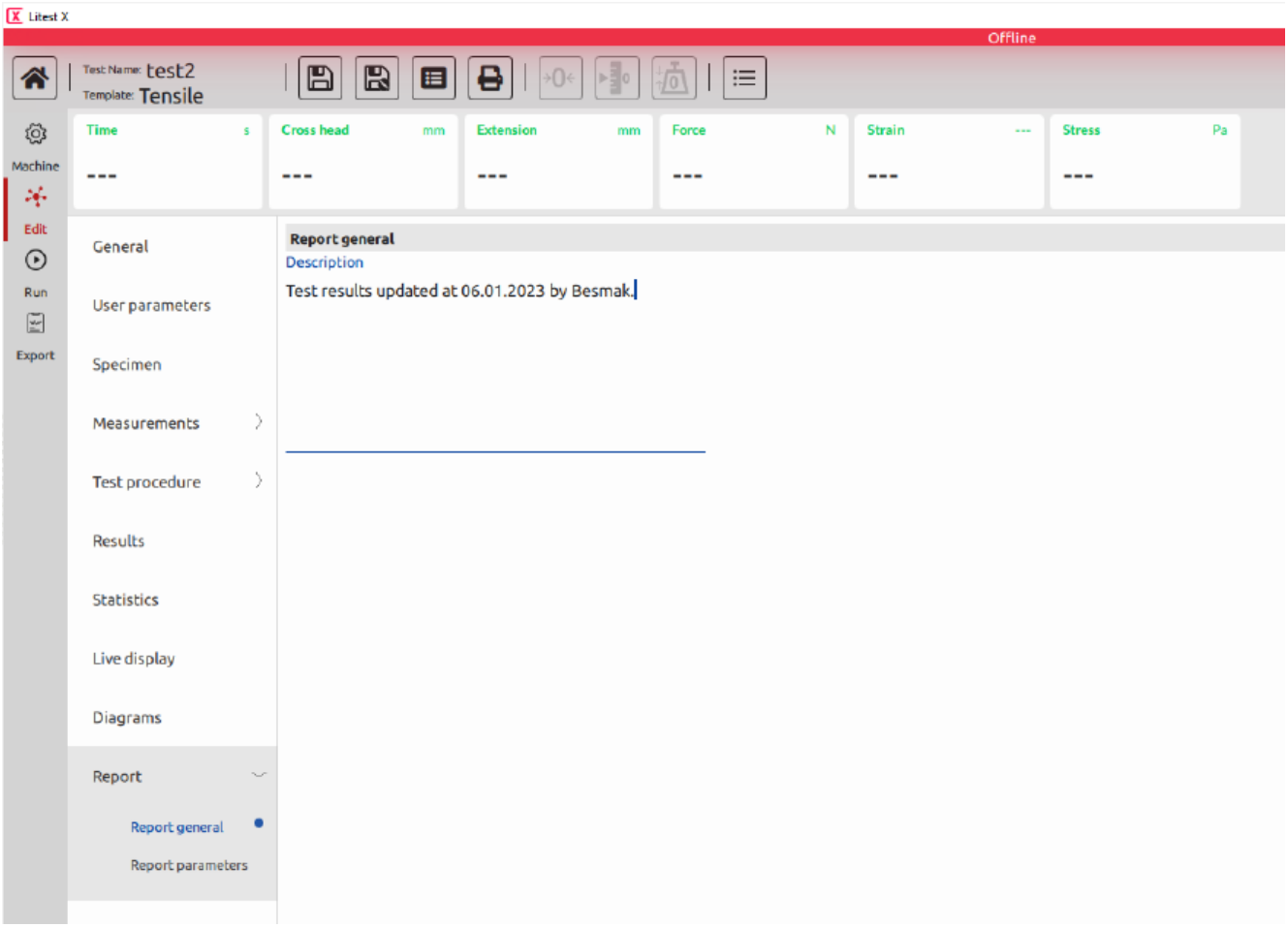


Figure 22

In the report parameters tab, different parameter names such as operator, brand number, department, etc. could be added by the user in an unlimited way, as shown below.

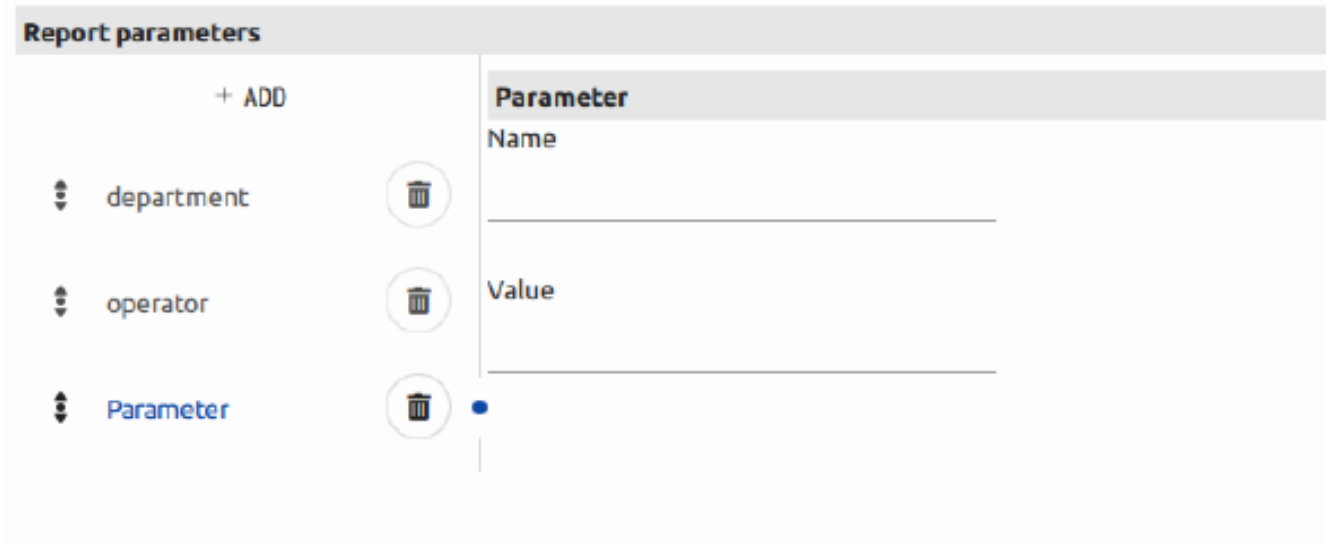
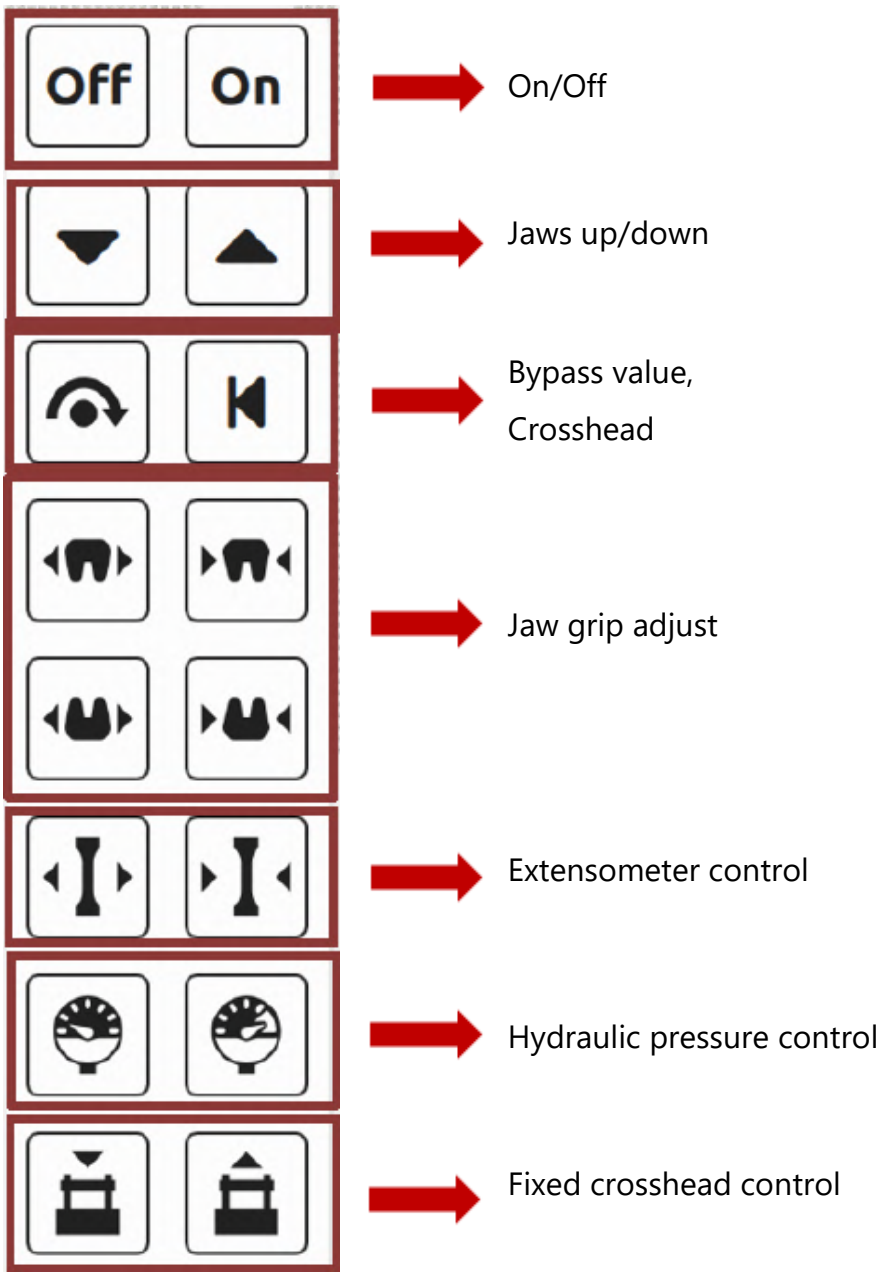


Figure 23

2.2.10. Running a test

On the next page, you can see the main screen of the tensile template run menu.


Off
On
On/Off
Jaws up/down
Bypass value,
Crosshead
Jaw grip adjust
Extensometer control
Hydraulic pressure control
Fixed crosshead control

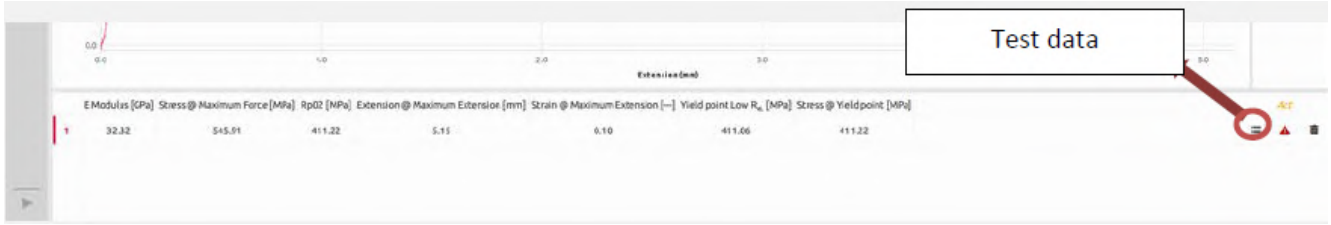

Test data

Figure 24

The user could still make changes to specimen data by clicking the Test Data button in the run menu without returning to the main menu, as shown above.

2.3. Exporting test results

For exporting results, CSV, Calculation, and PDF options are available.

Also, sending results automatically as an e-mail can be activated, as seen in the below picture.

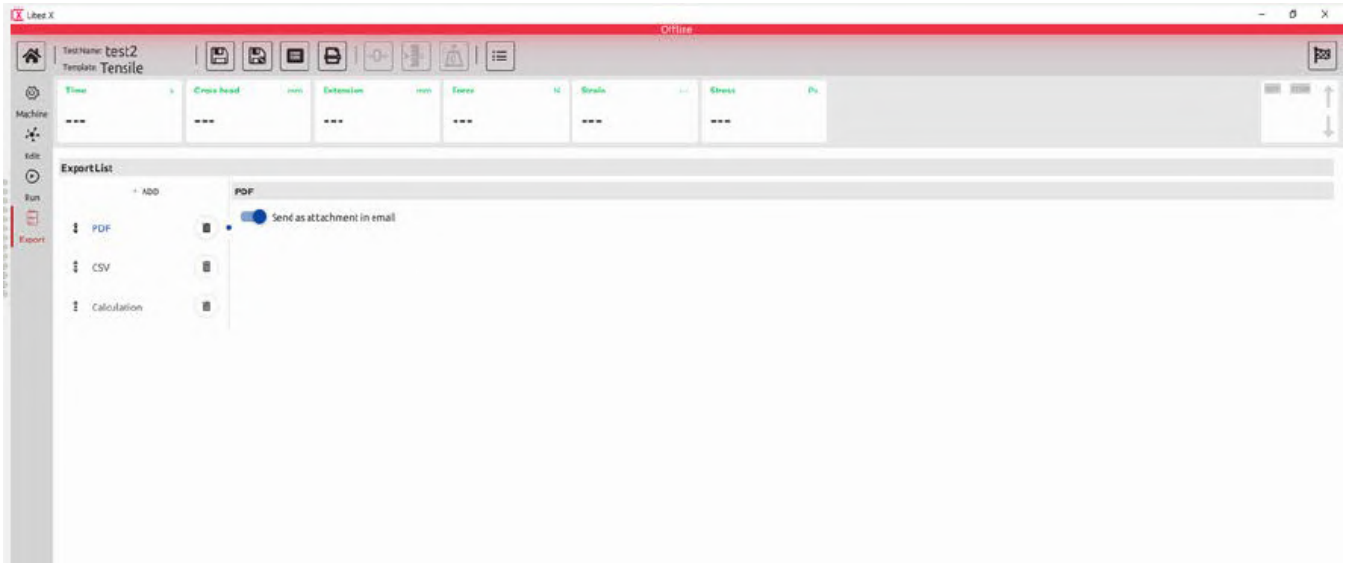


Figure 25

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