

Stand Alone

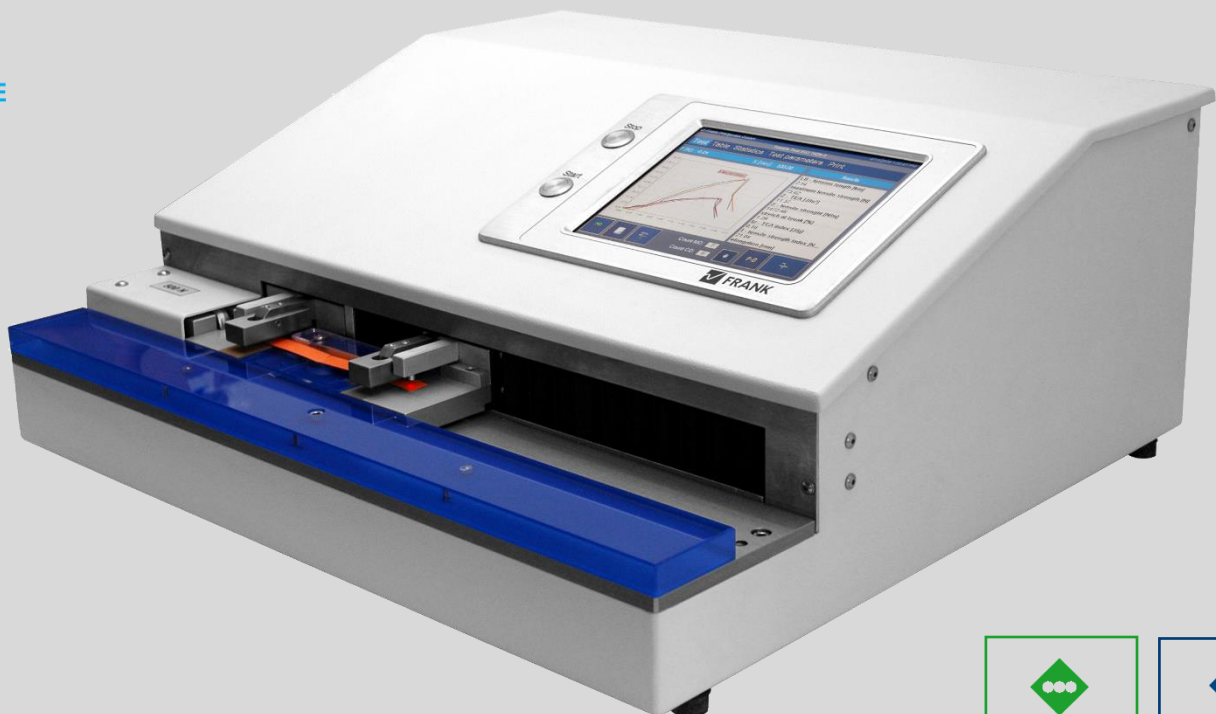


# Tensile Tester Horizontal

For:



For an accurate and fast measurement of all parameters with dry and wet samples of paper, board and tissue.



## MOST IMPORTANT BENEFITS:

- ✓ Plug and Play
- ✓ Automatic ratio calculation
- ✓ Automated sample identification
- ✓ Pneumatic sample clamping
- ✓ Graphs showing the measuring process



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## PRODUCT DESCRIPTION

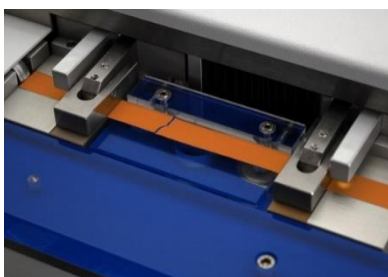
FRANK-PTI's horizontal tensile tester is one of the leading products of its kind. Its ergonomic design with touchscreen simplifies operation and reduces the testing time. The robust and reinforced construction helps to avoid falsifying influences like vibrations etc. This makes the results reliable even if measurements are repeated or done simultaneously. These optional features are available: tub for strength measurements with wet samples and a calibration device for performing self-tests of the load cell.

## TEST DESCRIPTION

The measurement starts immediately because of the preinstalled measurement programs. Select a test method and insert the sample support into the automatic sample clamps. Now the tester checks all the various sample parameters and determines whether the sample is an MD or CD strip. The tester identifies the test strip automatically when the sample is inserted. It starts the tensile test and completes it when the sample breaks. The sample clamps return to their initial position. The measurement results are displayed on the touchscreen. Another practical feature is: If you did various tests in MD and CD, you can compare the results in the statistics and display the ratios. It is possible to delete single measurements from the statistics.



Automatic and pneumatic clamping of the samples after the device detects that the sample has been inserted. Clamping time can also be adapted individually. Manual clamping also possible.



Release of the sample after breakage detection

## TECHNICAL DATA

### DEVICE / INSTRUMENT

- Easy operation via integrated touch screen
- 5 preset testing programs and applicable sample supports
- Test strips distinguishable into test series (e.g. MD/CD)
- Automatic ratio calculation (MD/CD)
- Pneumatic sample clamps and automatic sample detection
- Additional start button - for transparent samples
- Sample width: 15, 25 and 50 mm
- Sample support prevent the sample from sagging
- Max. sample stroke: 300 mm
- Test speed adjustable between 1 and 600 mm/min
- Available force sensors: 100-500N
- Automatic clamp return after test
- FRANK-PTI standard connections
- Compatible with ProbeNet
- Also as ModularLine version available
- Optionally available:
  - Wet tensile test
  - Calibration tool

### APPLICABLE STANDARDS

DIN ISO 1924-3  
 ISO 1924-2  
 EN 12625-4 I -5  
 Tappi T456 I T494  
 \*more standards on request

### MEASUREMENT

Units:	
Maximum Force	[N]
Breaking time	[sec.]
LB-breaking length	[km]
S-width-related breaking strength	[N/m]
I-breaking strength index (ten. strength index)	[Nm/g]
Z-work capacity (tensile energy absorption).	[J/m <sup>2</sup> ]
Iz-work capacity index (ten. en. ab. Index)	[J/g]
Change in length (Elongation)	[mm]
Tensile strength	[KN/m N/m]
Tensile stiffness	[KN/m]
Tensile Stiffness index	[MNm/KG]
Stretch at break [breaking elongation]	[%]
Wet tensile strength	[%]
Relative wet tensile strength	[%]
and much more	
*displayed values vary depending on chosen method and standard.	

Statistics:	Min./max./standard dev. / var. coeff.
Accuracy:	+/- 1%
Test speed:	0,1-600mm/min
Max. sample stroke:	300mm
Max. drive way:	160mm
Nominal load:	10-500N (depending on load cell)
Force resolution:	0,01N

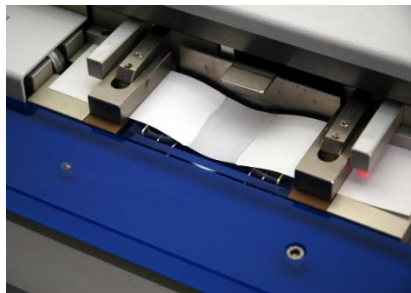
### Connections

Power Supply:	100-240V / 50-60Hz
Water:	nein
Compressed air:	4-6bar Connector for hose 6mm

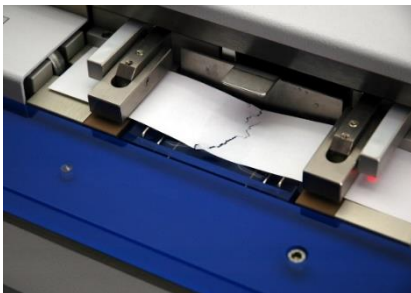
# Article No. S18505



The test strip must not be touched in the test area



The sample dips into the water with the predetermined breaking point



Sample is lifted out of the water and tears

## DATA

RS232:	Data output
Ethernet:	Data output / MQTT *via Moxa adapter
Parallel interface:	Printer
USB:	Updates / service

## DIMENSION

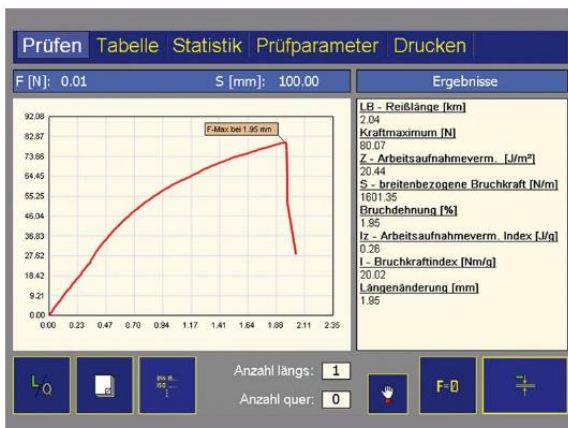
S815020000	<b>L x H x W net</b> 570 x 240 x 520 mm
<b>Weight:</b>	net 38kg

## ARTICLES / MODELS

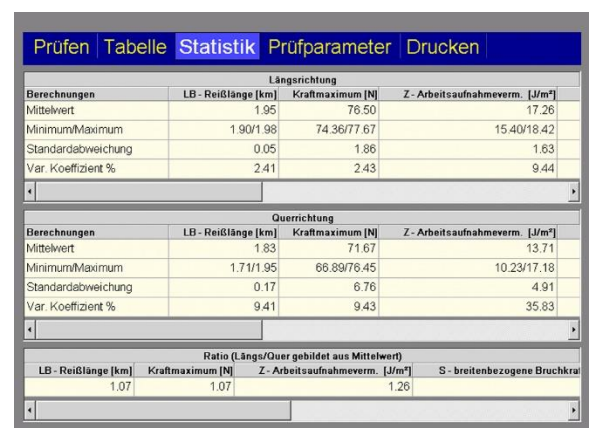
S815020000	Horizontal tensile tester
S815020001	Horizontal tensile tester - with wet tensile
S815020002	Horizontal tensile tester - with wet tensile, 50mm sample length
<b>Mandatory:</b>	
S815021010	Load cell 100N
S815021011	Load cell 200N
S815021012	Load cell 500N

### Recommended accessories:

S815021001	Calibration device without weight
S815021013	Weight set with T-beams
S406900001	ProbeNet software with on device license *further requirements explained on request



Display of test relevant values and graphs



Statistics menu with display of the ratio between MC and CD

# WET TENSILE TEST

## SAMPLE PREPARATION

For the wet tensile test acc. to DIN EN ISO 12625-5 samples with a width of  $50 \text{ mm} \pm 0.5 \text{ mm}$  and longer than 15 cm are used to enable detection by the sample sensor. It is important to ensure that the cut edges are undamaged, straight, smooth and parallel. The test strips are created using the double blade sample cutter. To guarantee error-free test results, the sample should only be touched outside the test area.

## TEST DESCRIPTION

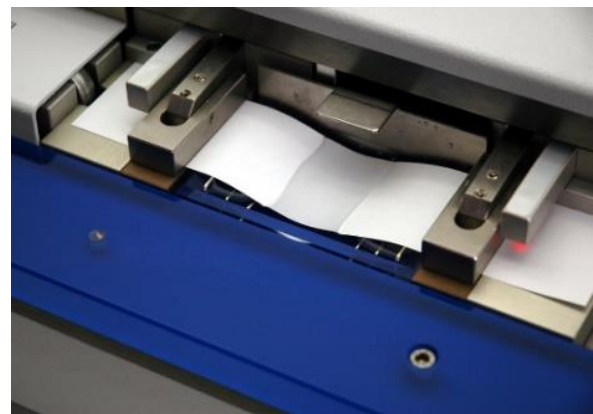
The program for wet tensile testing is selected from the touch screen and the corresponding parameters are automatically set. Before the test begins, the immersion container for the wet tensile test is filled with water to the lowest wire holder and placed between the test clamps. Then the test strip is placed in the test area. The sensors detect the sample, the clamps close and the test begins automatically. The test clamps move towards each other and the test strip sinks into the immersion container where the predetermined breaking point sinks into the water. It is held there for 15 seconds before the test clamps move apart again. This lifts the sample out of the water and stretches it till it breaks across the entire width of the strip. The test clamps move back to the start position and release the sample.

The test results are displayed on the touch screen with the individual measurements displayed numerically and additionally presented as a curve in real time.

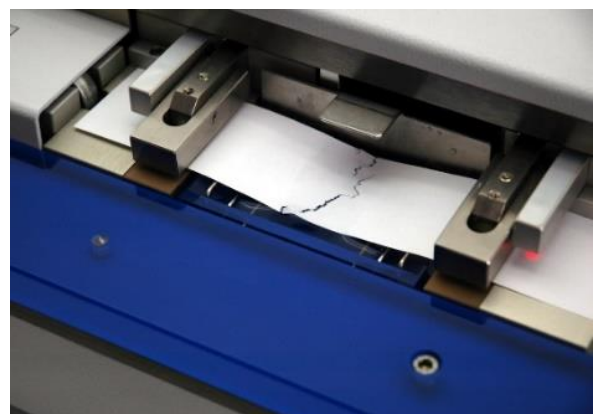
The test can be carried out with further test strips and the test results are recorded. If a comparison of two test series (e.g. MD and CD) is desired, the tensile tester offers the option of selecting the test strips of one of the two test series and the unit automatically calculates the relationship of individual results.



The test strip must not be touched in the test area



The sample dips into the water at the predetermined breaking



The Sample is lifted out of the water and tears

# DRY TENSILE TEST

## TEST DESCRIPTION

For the dry tensile test acc. to DIN ISO 1924-3, samples with a width of  $15 \text{ mm} \pm 0.1 \text{ mm}$  and longer than 15 cm are used. It is important to ensure that the long edges of the test strip are straight and do not deviate from the parallel by more than  $\pm 0.1 \text{ mm}$ . This requirement can be satisfied by creating the test strips with the strip punch or strip cutters.

The program for dry tensile testing is selected from the touch screen and the corresponding parameters are automatically set. The test strip is placed in the test area. It is important to ensure the sample is only touched outside the test area, to guarantee error-free test results.

On insertion, the sensors detect the sample, clamp it securely and the test begins automatically. The test clamps move apart and stretch the test strip to such an extent that it breaks. Then the test clamps move back to the start position and release the sample. At the same time the individual measurements are displayed numerically and additionally presented as a curve in real time. The test can be carried out with further test strips and the test results are recorded.

If a comparison of two test series (e.g. MD and CD) is desired, the tensile tester offers the option of selecting the test strips of one of the two test series and the unit automatically calculates the relationship of individual results.

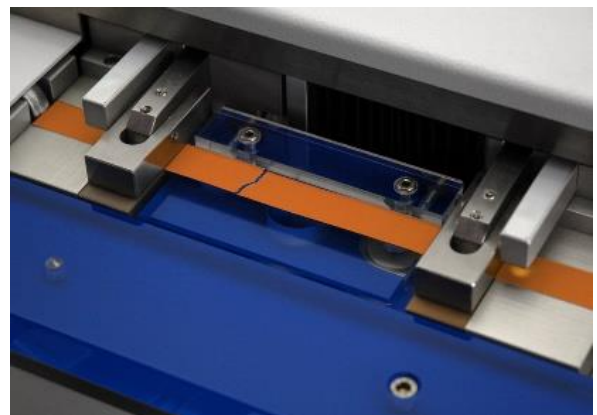
## OPTIONAL: CALIBRATION TOOL

To guarantee accurate measurements it is recommended that the load cell is checked regularly. The optional calibration tool is used for this task.

The calibration tool is placed on the test clamp and weights are added. The force values displayed on the touch screen are then compared with the values on the weights. It is simple, following this procedure, to determine if the load cell is providing accurate results.



Insert a sample of width 15mm



The sample is stretched until it breaks



Machine with built-in calibration device