

Features of FRICTION-METER R3088



Measuring process

The friction coefficient is calculated by measuring the two yarn tensions before and after the friction point. The values of the measured yarn tensions are calculated into logarithmic and subtracted from each other. The information thus obtained is divided by the arc value of the friction angle. The friction coefficient μ thus calculated is indicated on the F-METER.

$$\mu = \frac{\log T1 - \log T2}{\alpha}$$

The friction coefficient μ , as well as the two yarn tensions $T1$ (after) and $T2$ (before) are continuously recorded.

The F-METER R-3088 can also be used as a double ELECTRONIC-TENSIOMETER

Measuring methods

The following measurements are possible:

- yarn/ceramic friction
- yarn/steel friction
- yarn/yarn friction
- stick/slip measurements (static friction)

Applications

- friction coefficients of yarns, ribbon, tows
- friction coefficients of yarn guides
- finish efficiencies
- evenness of fiber surfaces
- measurements of yarn tensions (1 or 2 simultaneously)

Technical Data

- automatic zeroing and calibration of measuring heads
- button for setting wrap angles (90 - 6 x 360 °)
- measuring range : friction μ 0 – 1 0 - 0.33 0 - 0.166
tensions 0.02 - 20 000 cN
- Data evaluation:
WINDOWS XP / W-7 and higher
Line recorder

Measuring range.

Each measuring head can be set for 3 measuring ranges in the ratio 10 : 5:
2.5 (e.g. Measuring head 100 cN for 0 - 100 / 0 - 50 / 0 - 25 cN)

If the measuring ranges are exceeded or not attained an optical signal is automatically activated.

Power supply: 110 / 200 volts - 50 / 60 cycles - 100 watts

Accessories:

Measuring heads

The F-METER R-3088 requires 2 measuring heads to effect the measurements. These heads are normally of the same nominal value but they may also differ. The instrument takes measuring heads of different nominal values automatically in account.

Measuring heads for the following nominal values are obtainable:

1 / 4 / 10 / 20 / 40 / 100 / 200 / 400 / 1000 / 4000 / 10000 / 20000 cN

Yarn transport

A reproducible yarn transport through the measuring head at different speeds is mandatory. The winder R-1084 with a controlled speed range (0.001 - 300 m/min.) and settings for different wrap angles with supports for the measuring heads is recommended (see separate description) A take-up System R - 1073 takes the yarn over from the winder R-1084.

PC-Interface

The F-METER R-3088 is connected to the PC with the interface and software ST/SL R-3088. The software supplied enables the PC to process all statistical relevant values and to display friction graphs (see separate description)

SOFTWARE

F-METER R-3088 ED/STSL

It is recommended to evaluate the data measured on the F-METER R-3088 with the interface **R-3088** and the special software **R-3088 ED/STSL**.

All data are evaluated statistically and graphs in different forms are presented.

The structure of the graph can be followed on the monitor and printed out at the end.

Beside of the evaluation of the friction data the software also evaluates yarn tensions taken on machine positions from the built in ELECTRONIC-TENSIOMETER.