



TEXTOMETER RMS



Moisture monitoring and control system

Measurement

Control

Automation

TEXTOMETER RMS

Measurement and control of moisture on drying installations.



One of the most influential criterion with regard to drying is the moisture in the material. The correct amount retained determines to a great extent the economic efficiency of every drying operation, the quality of the product, and/or subsequent processing, and is therefore of some considerable concern.

To dry economically means getting the best out of the energy consumed and attaining a consistent level of residual moisture by continuously measuring the amount, and controlling the drying process to a target set-point.

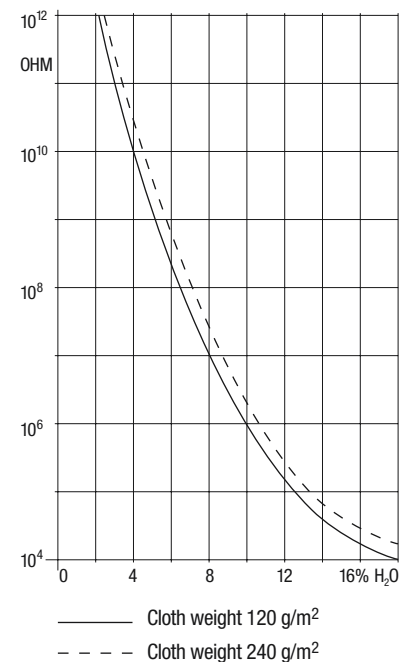
Measuring principle

Within the confines of residual moisture, of the electrically measurable variables of textile materials, conductivity is the one most dependent on the amount of water in a textile substrate. A difference in residual moisture of merely a few percent alters conductivity by the power of ten; the water content and electrical conductivity of materials containing cellulose are linked together by an exponential function. Neither cloth weight (see below) nor thickness, nor the nature of the water, nor the composition of the liquor have, within the limits of residual moisture, anywhere near the same powerful influence over conductivity as the amount of water in the commodity.

The moisture retained by most material compositions can be readily determined by direct measurement of their electrical conductivity.

Of particular advantage is the fact that different textile materials exhibit specific but dissimilar percentages of moisture retention at the same level of electrical conductivity. The individual calibration curves related to the various material compositions are stored in the system.

For fully synthetic materials, we recommend an indirect method of determining moisture retention, namely by monitoring surface temperature (Thermoset OMT module). Their exceedingly high electrical resistance and tendency to release charges (electrostatic) adversely affect the quality and reproducibility of measurement of electrical resistance.

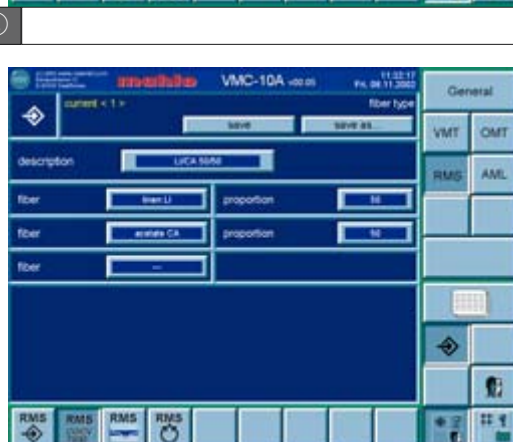
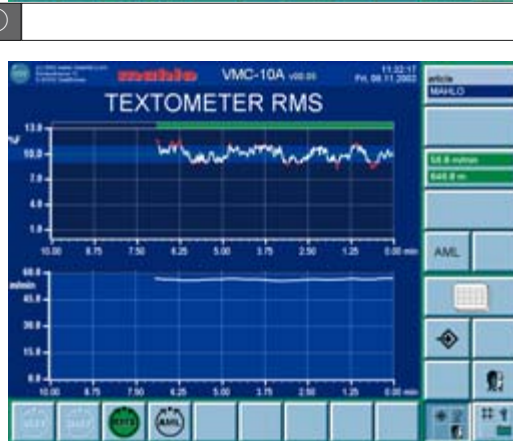
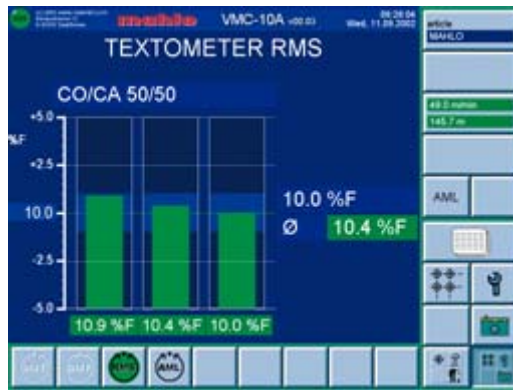


Operation

Once switched on, the user-interface will appear on the touch-screen monitor. The system can then be controlled via the surface of the screen!

Displays:

- ① - Indicates selected type of fibre or mixture - Indicates target moisture retention and readouts (in figures and in the form of bar graphics), the latter as average values or in profile form across the on-line web
- ② - Freely configurable trend diagrams indicating residual moisture and line-speed relative to time or passage count (optional display of single or triple-trace diagrams)
- ③ - Choice of a wide variety of basic fibres - free choice of fibre blends comprising up to 3 basic fibres (in 1% increments)



An assortment of electrodes for different applications

Electrical resistance is measured between the 2 poles of an electrode. These can be constructed and arranged in various ways in accordance with your requirements (eg. electrode with counter roller, 2 rollers isolated from each other, etc.)

Standard electrode (for external use) for conventional textile fabrics

Low-moisture electrode for the usual textile materials and such with a high percentage of synthetic (with 3-channel measurement at the left, centre and right for specific applications)

Full-width roller electrode for particularly sensitive fabrics (to avoid leaving tracks)

Spiked electrode for thick materials, felt, heavy woollen fabrics, carpeting, etc.

Various electrodes for mounting internally

Typical electrode assembly measuring at the left, centre and right at the outlet of a stenter



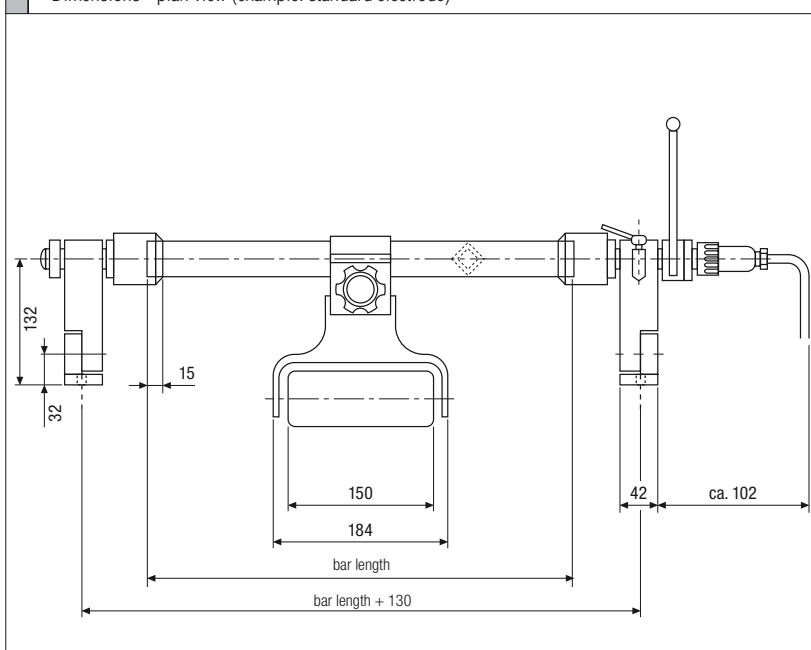
Technical data

Type of fibre and mixtures	can be chosen at will from a list, stored calibration curves (unsuitable for insulators (glass, 100%PA, etc.) or electrical conductors (metal fibres or filaments))
Range	in accordance with type of fibre, mixture and electrode: eg. cotton: 3 - 20 % linen: 7 - 43 % linear: 0-100 graduated scale (low-regain electrode: from 1%)
Indicated readouts	standard electrode (1-channel): highest moisture measurement 3-channel electrode: highest, lowest or arithmetically mean measurements
Mains supply	230/115V, 1 ph, 50/60 Hz
Power consumption	dependent on electrode
Ambient temperature	signal amplifier max. 50°C
Electrodes	assorted types for internal or external installation on sizing ranges and dryers of every description dimensions and weights in accordance with type

Benefits at a glance:

- Increased productivity, improved quality
- Optimum residual moisture for subsequent processing
- Measures low percentages of moisture retention as well
- First-rate reproducibility
- Maintenance-friendly and trouble-free
- Diverse electrodes for the widest possible variety of applications
- Establishes in isolated cases the distribution of moisture at the left, centre and right

Dimensions - plan view (example: standard electrode)



Dimensions - end view

