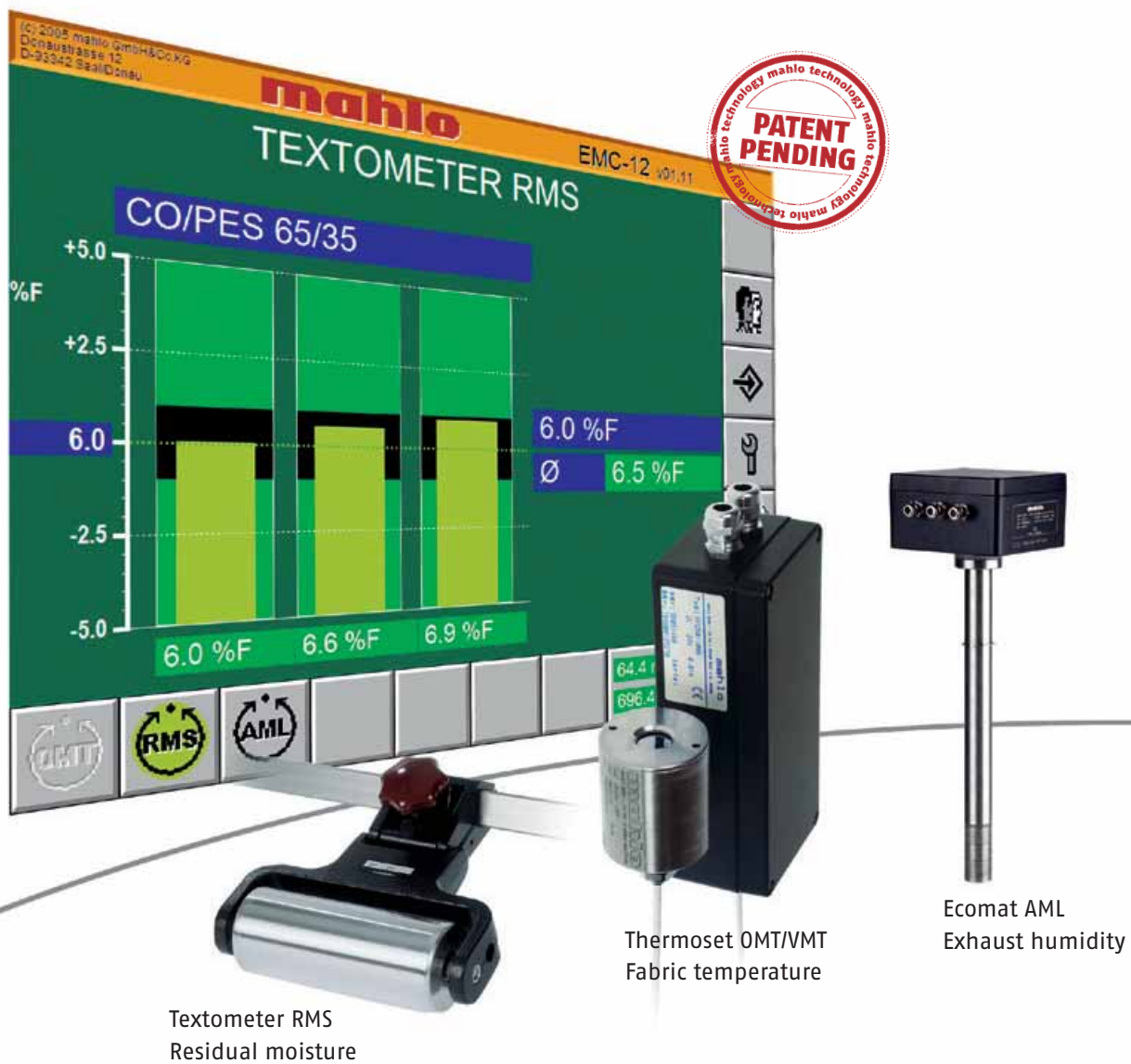


ECOPAC® EMC-12

Control system for drying processes





TEXTILE



NONWOVENS



PAPER



PLASTIC

ECOPAC® EMC-12

This modular system guarantees a quality product and optimization of the energy balance.

Product-highlights

- ✓ A single system controls all essential drying-process parameters
- ✓ Intuitive user interface
- ✓ Easy to install

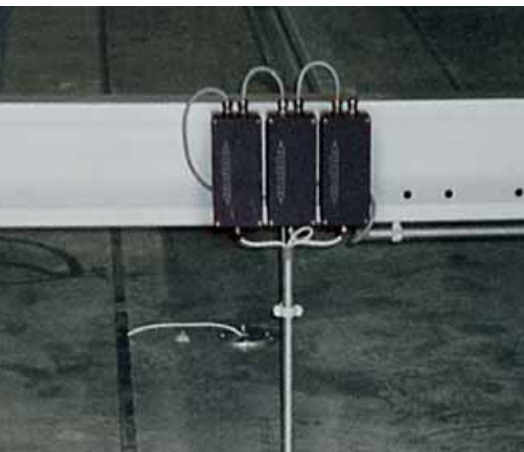
Customer benefits

- ✓ Guaranteed quality finish
- ✓ Optimum energy balance on drying processes

Function and applications

An Ecopac EMC-12 monitors and controls essential fabric and process-related parameters such as residual moisture, fabric temperature and exhaust humidity on all kinds of dryers in the textile processing and finishing sectors. An Ecopac EMC-12 monitors these parameters simultaneously via a single, modular appliance, which can be flexibly adapted to meet the given monitoring and control requirements. It can accommodate up to 4 sensors according to choice.

Ecopac EMC-12 is entirely microprocessor-controlled. Data is exchanged between Ecopac EMC-12 and an external computer system (e.g. host-computer) via a wide range of interfaces (e.g. Profibus, TTY/RS232 etc.). The sensors are simply connected to the appliance via a single CAN-bus cable.



Typical installation:
thermoset OMT/VMT between
two circulating-air ducts

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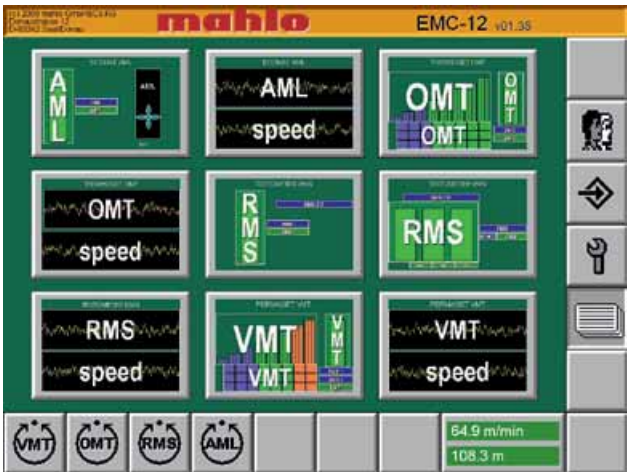
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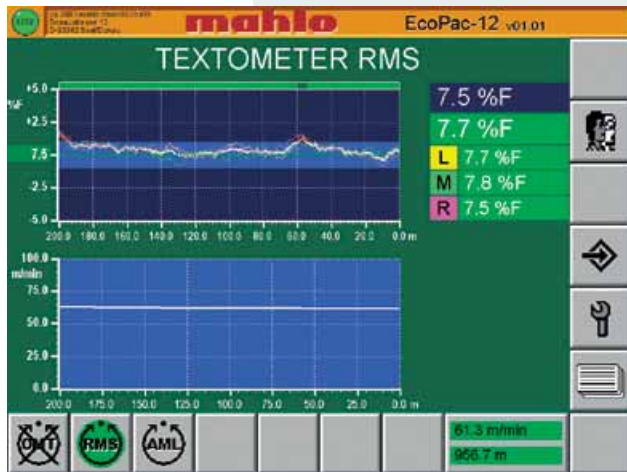
Visualization

The appliance is controlled via a 6.5" TFT touchscreen monitor. The informative display is clearly configured, control is intuitive. Each sensor has its own screen display. Input is entered via sizable touch-sensitive buttons on the screen.

Example: the passage-count-related histogram for the Textometer RMS indicates the trend of the progressive readouts during the passage of 200 m of fabric, thereby enabling the user to pinpoint quite easily target-moisture errors. The target/actual graphics indicate the current readout, target moisture with tolerance band, line-speed and auto-control status.



Main display: the various sensors can be selected here.



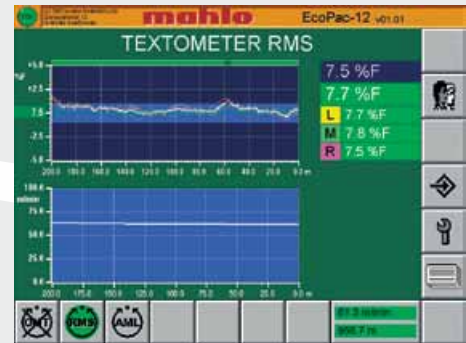
The target/actual graphics indicate the current readout, target moisture with tolerance bands, line-speed and auto-control status.

SENSORS

ECOPAC® EMC-12

RESIDUAL MOISTURE, FABRIC TEMPERATURE AND EXHAUST HUMIDITY MONITOR

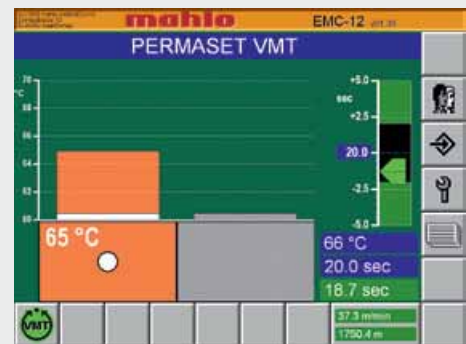
Textometer RMS sensor,
electrode for measurement of
residual moisture



Control panel with 6.5" TFT touchscreen monitor,
display and control in one = basic system



Thermoset OMT/VMT sensor,
radiation-pyrometer for measurement of temperature



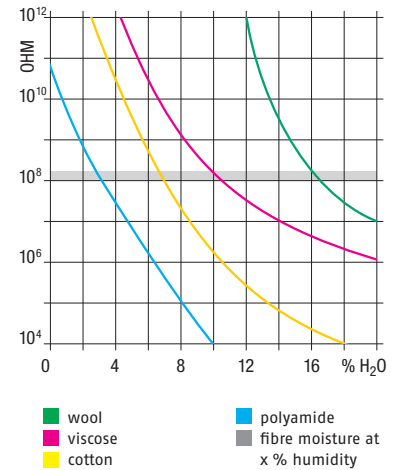
Ecomat AML sensor,
sensor for measurement of exhaust humidity



Residual moisture monitor: Textometer RMS

In terms of finished quality and the economical use of energy, residual moisture is a vital criterion whilst fabric is in the process of being dried. An RMS sensor measures the fabric's electrical conductivity to determine the amount of moisture it retains. An RMS can be set to monitor and control almost 50 000 combinations of fibre, comprising up to 3 different kinds (from 12 basic types of fibre) in any percentage ratios you care to choose. Roller or bar-type electrodes can be supplied to suit all possible applications. To satisfy the most exacting requirements, an RMS can measure and control exceedingly low percentages of residual moisture – from 1.5 % upwards – when supplied with a specially designed electrode and matching electronics or optionally with 3 electrodes to monitor residual at the left, centre and right of the web.

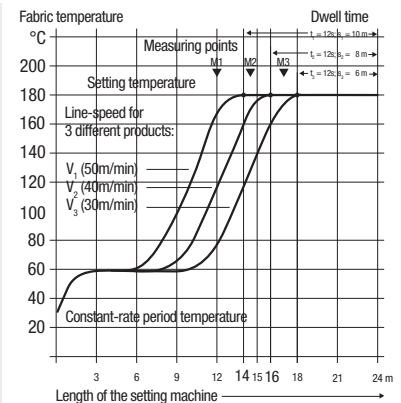
■ Graph: calibration curves for various types of fibre.



Fabric temperature: Thermostat OMT/VMT

Awareness of a fabric's temperature is essential for reliable control of drying processes. This applies in particular to synthetic materials, as experience has shown that the moisture-related temperature of such fabrics can be used as a most reliable variable to control moisture regain. In this case, there is no contact between fabric and sensor, since temperature is measured by an infrared radiation-pyrometer designed specifically to withstand the heat and harsh environments of textile mills.

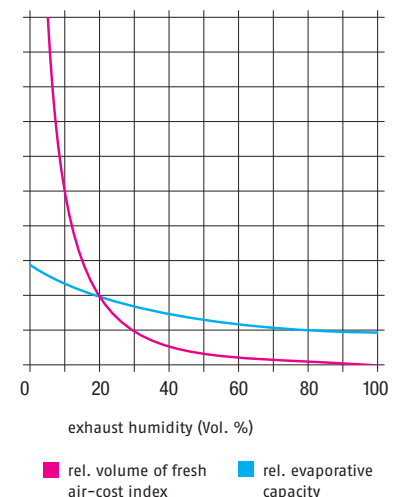
■ Graph: automatic control allows the dwell time of the product to be precisely monitored in the stenter.



Exhaust humidity: Ecomat AML

Energy is expensive! With an Ecomat AML sensor, energy consumption can be restricted to the actual amount required to dry the material. It measures the humidity of the circulating air and controls the latter's flow by regulating exhaust dampers or the speed of an exhaust fan. The sensor is basically a zirconium cell, and this patented system can establish the amount of water in the air irrespective of the presence of other gases. The sensor is heat-proof and impervious to fume-laden deposits. It is distinguished by its lasting stability and exceptional accuracy.

■ Graph: indicates the cost index to evaporative capacity, and shows how quickly costs soar when the exhaust dampers are left wide open and there is thus very little vapour (Vol. %) in the exhausted air. The ideal then is to control the exhaust dampers such, that the exhausted air absorbs as much moisture as possible without adversely affecting the dryer's capacity to dry.



TECHNICAL DATA | TEXTOMETER RMS • THERMOSET OMT/VMT • ECOMAT AML

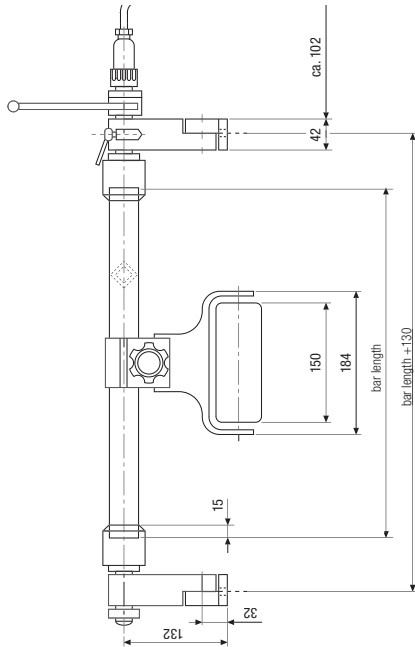
Sensor	Textometer RMS
Measured parameter	Residual moisture
Measuring range	Dependent on type of fibre, mixture and electrode: e.g. cotton: 3-20 %, Linen: 7-43 % Linear scale: 0-78 scale div. (low-residual electrode: from 1 %)
Readout display	Standard electrode (1-channel): highest moisture readout 3-channel electrode: highest, lowest or arithmetical mean readout
Operating limits	Sensor controller: 0...+50 °C

Sensor	Thermoset OMT/VMT
Measured parameter	Temperature
Measuring range	0...+250 °C
Measured area	Angle of beam spread: 120°
Accuracy	≤ 1 % of readout range (at 23 °C)
Environmental rating	KPA to DIN 40040 standards
Operating limits	Signal amplifier: 0...85 °C, sensor with cable: 0...250 °C

Sensor	Ecomat AML
Measured parameter	Exhaust-air humidity
Measuring range	H ₂ O 30/50/100 Vol. % 266/622/1000 g/kg Dewpoint O ₂ /polluted gas 100 % Vol. (CAN)
Accuracy	≤ 1 % of top-end of range
Reproducibility	±0,2 Vol. %
Environmental rating	JWE to DIN 40040 standards
Operating limits	Sensor controller: 0...+50 °C Sensor: 0...+300 °C

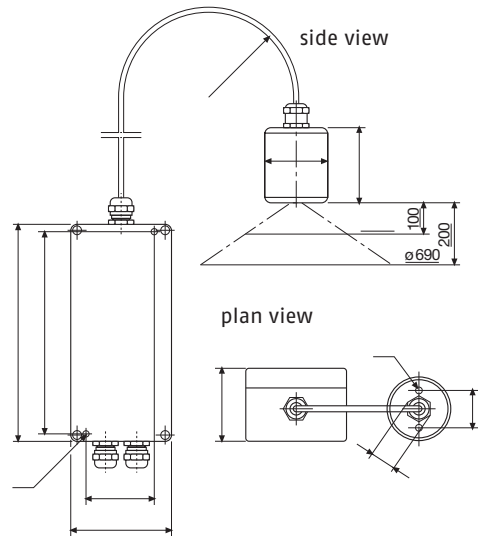
DIMENSIONS

Textometer sensor



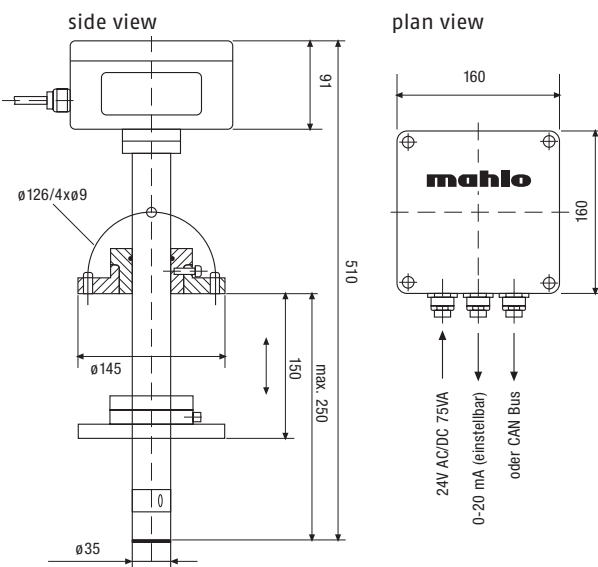
Sensor TEXTOMETER RMS
91-013151-07

Thermoset sensor



Sensor THERMOSET OMT/VMT
91-010234-02

Ecomat sensor



Sensor ECOMAT AML
91-010338-02

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