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GreCon

Fire
Protection

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Measuring
Technology

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Service



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Inline Moisture
Measurement with
Microwave
Technology

GreCon
MM 6000 VS



TEMSOL

MM 6000



Your Benefit



- Extremely fast and precise moisture measurement
- No influence by colour and form of the material to be measured
- Independent of density
- Long-time stability
- Fast and early detection of troubles
- Contact (MM 6000) or non-contact (MM 6000 VS) measurement, depending on the customer's requirements
- Non-contact measurement of endless materials (MM 6000 VS)
- Suitable for continuous and discontinuous material flows
- Continuous measurement of the moisture content of endless materials (MM 6000 VS)

Why GreCon



- Measurement of the total of core and surface moisture
- Optical changes (colours or reflections) do not affect the measuring results
- Suitable for fast processes due to short measuring times
- Easy, intuitive operation
- Online support via GreCon SATELLITE

Inline Moisture Measurement with Microwave Technology

Wherever precise product moisture is required, the inline moisture analysers provide the users with the necessary information.

The continual availability of product properties allows for easy adjustment of the production process to ensure a high standard of product quality. The moisture content of the material used or produced is of utmost importance because it must be neither too wet nor too dry, independent of the application.

MM 6000 Series

The MM 6000 series measuring systems provide precise measuring results. Measurement is conducted inline, independent of density, surface structure and colour of the material measured.

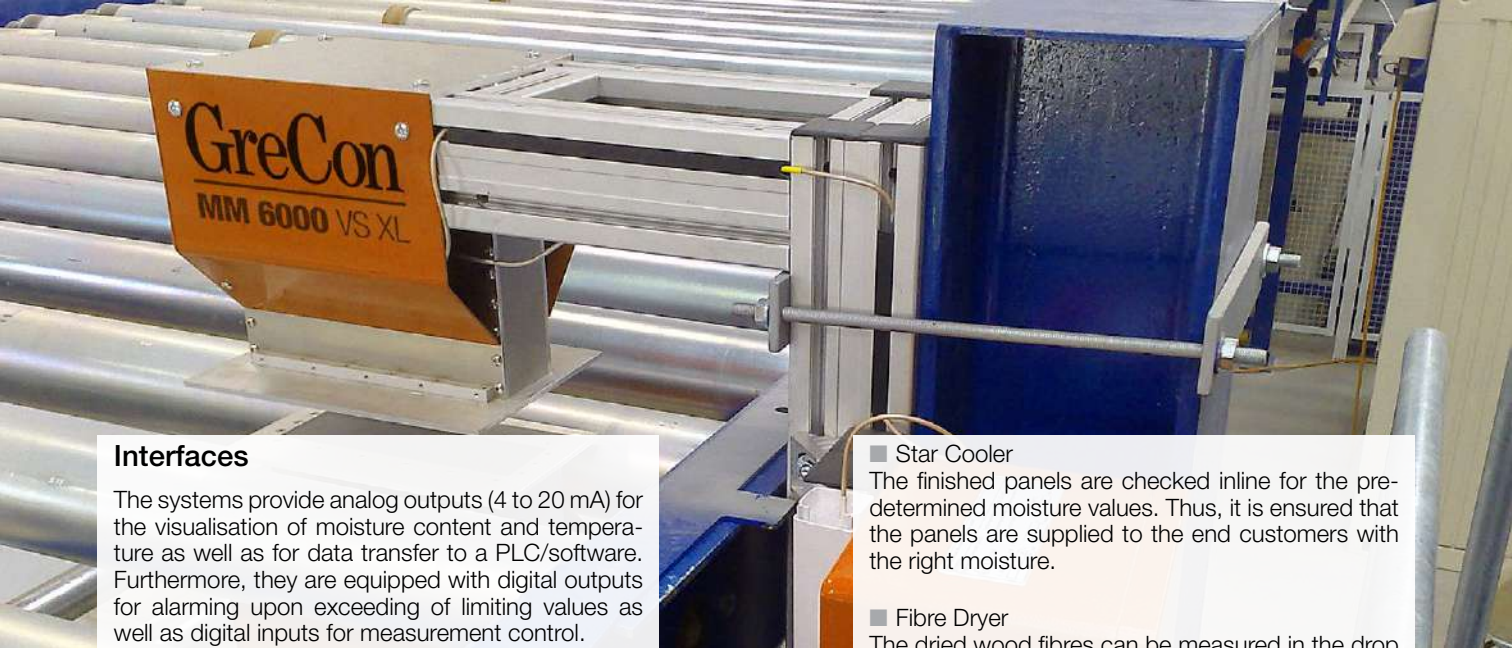
Due to the deep penetration of the microwave field/signal into the product, the water, which is physically bound, is determined by the sensor's detuning and attenuation of the frequency of resonance.

Measurement is done either by contact of the material with the measuring head/sensor (MM 6000) or in a non-contact way by a slit sensor (MM 6000 VS). The non-contact measuring method is suitable for both continuous (MM 6000 VS) and non-continuous (MM 6000 VS LMS) material flows.



Technical Specifications

	MM 6000	MM 6000 XT	MM 6000 EX	MM 6000 VS	MM 6000 VS XL	MM 6000 VS LMS
Dimensions of measuring head (mm)	300 x 200 x 180	300 x 200 x 180	230 x 190 x 200	440 x 220 x 210	765 x 830 x 360	440 x 220 x 210
Product temperature	+3 °C - +70 °C	+3 °C - +140 °C	+3 °C - +140 °C	+3 °C - +70 °C	+3 °C - +70 °C	+3 °C - +70 °C
Ambient temperature	0 °C - 40 °C					
Microwave power	< 20 mW					
Measuring range	0 - 18 % atro					
Repeating accuracy	+ 0.1 %					
Product memory	max. 32 different calibration curves					
ATEX approval	none	none	zone 20	none	none	none
Max. material thickness (mm)	none	none	none	10	50	10
Way of measurement	contact	contact	contact	non-contact	non-contact	non-contact
Material flow	continuous & discontinuous	continuous & discontinuous	continuous & discontinuous	discontinuous	discontinuous	continuous
Measuring spot (mm)	120	120	120	20 x 200	20 x 200	20 x 200
Measuring sensor	ceramic ring sensor	ceramic ring sensor	ceramic ring sensor	slit sensor out of aluminium	slit sensor out of aluminium	slit sensor out of aluminium
Temperature sensor	integrated	integrated	integrated	external pyrometer	external pyrometer	external pyrometer
Software	I-sensor					



Interfaces

The systems provide analog outputs (4 to 20 mA) for the visualisation of moisture content and temperature as well as for data transfer to a PLC/software. Furthermore, they are equipped with digital outputs for alarming upon exceeding of limiting values as well as digital inputs for measurement control.

Service

GreCon measuring systems are equipped with GreCon online support SATELLITE. This provides safe, simple and fast remote support when there is trouble or to check the system. Each online support is logged and stored in the system's history.

Applications of the MM 6000

■ Dryer

An MM 6000 (up to 70 °C) or MM 6000 XT (< 140 °C) is preferred in this position. At the dryer outlet, the moisture values can be used to regulate the dryer.

■ Forming Line

The use of a moisture analyser in or after the forming line gives final data about the moisture of the spread chip or fibre mat. Control of upstream processes of chip or fibre processing are possible.

■ Star Cooler

The finished panels are checked inline for the pre-determined moisture values. Thus, it is ensured that the panels are supplied to the end customers with the right moisture.

■ Fibre Dryer

The dried wood fibres can be measured in the drop chute after the rotary valve.

Applications of the MM 6000 VS / MM 6000 VS LMS

The MM 6000 VS or MM 6000 VS LMS are especially suitable for panels or endless materials, such as

- Paper
- Textiles
- Veneer
- Panels

References

Moisture measurement in the production of

- Fibreboard
- Gypsum board
- Hardboard
- OSB board
- Particleboard
- Mineral fibre
- Impregnated paper
- Decor paper