

MWF 5000

Inline Moisture Measurement
with Microwave Technology



GreCon®

Production and Quality Control with the GreCon Moisture Analyser

Exploit all reserves of your production, homogenise your process, increase the availability of your equipment and increase your profit.

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.

For the production of wood based panels, the moisture content of the material used is of utmost importance. Chips and fibres must be neither too wet nor too dry. If they are too wet, reductions in panel quality and perhaps slower production speeds will occur. If they are too dry, energy is wasted. The same applies to glued material.



Construction of the MWF 5000

Moisture analysers of the MWF 5000 series consist of a microprocessor-controlled evaluation unit and a planar sensor which are linked by two microwave cables. The MWF 5000 works according to a precise resonator measuring principle. The measuring field of a microwave resonator is filled with material. The resulting moisture-dependent change in the natural frequency and half intensity width is measured and evaluated by using a patented method. The result is the density-independent moisture content of the sample.

Optionally, the measuring system can be expanded to a density analyser. The material moisture and density are then determined simultaneously. The moisture value is represented and stored, if desired. Up to 20 (optionally 40) different articles with the calibration curve and measured data can be stored in the battery-buffered memory of the system. The data can be copied to or from a connected PC with a backup function. A password protects all or only individual data levels against unauthorised access. The system has user programmable analog outputs, control and alarm lines and two serial interfaces for the transmission of data to printers or computers.

Applications

■ Dryer

A combination of two MWF 5000 is preferred in this position. With the measured product moisture before the dryer, the amount of material can be regulated via the feed velocity. At the dryer outlet, the moisture values can be used to regulate the dryer.

■ Blender

Similar to the drying process, two moisture analysers are used in the blender area. The automatic supply of glue and resin can be regulated by the values measured at the inlet and outlet of the blender. Gluing is optimised, which ensures the high strength properties of wood based material.

■ 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. Automatic 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.

Technical Specifications

- Measuring range: 1 % to 85 %, depending on sensor type and product, selectable in subdomains
- Measuring accuracy:.....± 0.35 % (standard deviation for tenfold measurement)
- Measuring time:..... < 1 second
- Product memory:20 products (optional 40 products)
- Data security: CMOS memories with backup batteries
- Sample temperatures:..... 0 °C to 90 °C
32 °F to 194 °F
- Ambient temperatures: -10 °C to 40 °C
-14 °F to 104 °F
(with the system being switched on)
- Options (on demand): density measurement, with touch panel
- Mains supply: 110 V to 230 V AC, 50 Hz to 60 Hz, 70 VA
- Evaluation unit:stainless steel housing
- Protection: IP 55 (optional for ATEX zone)
- Planar sensor:stainless steel housing with ceramic measuring surface
- Protection: IP 65 (optional for ATEX zone)

Why GreCon



- Measurement of core and surface moisture
- Optical changes (colours or reflections) do not affect the measuring results
- Measurement of discontinuous processes
- Up to 1000 measured values per second
- Representation of profile measurements
- For fast processes due to short measuring times
- Easy, intuitive operation (many short-cuts)

Your Benefit



- Extremely fast and precise moisture measurement
- No influence by colour and form of the material to be measured
- The measuring system is supplied pre-calibrated

References

- Fibreboard
- Gypsum board
- HDF board
- Hardboard
- OSB board
- Particleboard
- Wood cement
- Wet fibreboard
- Mineral fibre
- Poplar insulating board





OUR HEADQUARTERS AT ALFELD - BUILT BY WALTER GROPIUS IN 1911

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