# Automated moisture measurement

Measuring systems for web materials





VenScan VenScanXL VenScanXXL TriScan

**VenScan series** 





### **VenScan-series**

### Microwave-based measurement technology

- Measurement irrespective of density and grammage
- Very precise and fast measurement
- Method ensuring long-term stability
- No dependence on product color and surface of the product
- Measures the core and surface moisture
- Contactless

### **Optimized process**

- Automated process control
- Current information on process control
- Fast and early detection of faults
- 100% control
- Less waste

### Simple handling

- Measurement can be tracked on a monitor
- Very simple calibration
- Extensive options for evaluation
- Online support

### Effects on your production

The devices of the VenScan series

- prevent costly production downtimes
- permit faster achievement of product quality
- minimize waste
- reduce costs due to complaints
- optimize use of personnel
- reduce energy costs

### Special features of the device versions

VenScan

up to max. 10 mm material thickness

### VenScan XL

up to max. 40 mm material thickness

### VenScan XXL

up to max. 100 mm material thickness

### TriScan

Measurement of the product at 3 points simultaneously

Contactless measurement throughout the material right into the core and irrespective of the color. Maintenance-free and safe use without safety approvals.





# Tailored to your need

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### Areas of application

- Foils
- Paper
- Cardboard
- Veneer
- Solid wood
- Engineered wood materials
- Textiles
- Flat materials, e.g. wooden boards
- Web materials, e.g. paper webs



### Monitoring directly in the product flow

The measuring system VenScan is particularly suitable for web and flat materials. It can be flexibly integrated into the production process for these materials, where it continuously measures the water content and optionally the grammage of the product.

The angewandte 2-ParameterMicrowave Resonance method used by Döscher Microwave Systems permits measurements independently of the material density, filling level and color.

### VenScan

- continuously monitors the water content over the entire production process
- determines the moisture parameter quickly and reliably

### Further characteristics

- minimum calibration effort without previous knowledge
- high measuring accuracy
- reproducibility
- high long-term stability

### Non-wearing, precise, and long-term stability

The sensor surfaces are insensitive to dirt and maintenance-free.

Further special features of the series: Contactless measurement over the entire material right into the core.

Radiation level so low that no special safety rules have to be complied with.

### VenScan device tailored to your needs

The VenScan sensor that is integrated directly into the product flow depends on your product and on your specific production conditions. We will find the perfect solution in a personal discussion on your site.



# For varied conditions of use

## VenScan

# Automated moisture measurement of veneers and laminates

The VenScan measuring system can be flexibly integrated into the production process, where it continuously measures the moisture and optionally the grammage in materials with a maximum thickness **10 mm**.

#### The task:

Precise contactless and fast measurement of the product moisture during the process in order to monitor and control the production process. This ensures high product quality.

### The solution:

Contactless measurement of the surface and core moisture is performed within fractions of a second irrespective of the density of the material. Any fluctuations in the grammage and material thickness have no effect on the measurement result.

### VenScan XL

# Automated moisture measurement of solid wood and parquet

Due to its low installation and calibration effort, this measuring system made by Döscher can be quickly and easily integrated into the production process, providing accurate measurement results.

### The task:

A customer would like to measure the product moisture of a wood material that has a product thickness of 40 mm.

#### The solution:

Besides solid wood and engineered wood, the VenScan XL measuring system also reliably measures the moisture and grammage in a range of other materials. Possible fields of application range from ceiling boards through soundproofing mats to various types of engineered wood.







## VenScan XXL

# Automated moisture measurement in solid wood

The VenScan XXL measuring system has been developed for large material thicknesses. The moisture in materials up to 100 mm thick is determined contactlessly and continuously.

### The task:

A manufacturer of solid wood with a thickness of up to 100 mm relies on fast moisture measurement during further processing.

#### The solution:

Both in speed and precision, the VenScan XXL is equal in every way to its smaller counterparts. Here, too, the production process is immediately supplied with up-to-date and precise moisture measured values, irrespective of the density of the material.

### TriScan



# Automated moisture measurement at three positions

The TriScan system is an example of the wide range of special solutions that Döscher Microwave Systems offers its customers:

#### The task:

A customer requires a further special solution for a production process under challenging conditions. Measurement at three points in the material is required.

### The solution:

With the TriScan, moisture measurement can be performed in three parallel webs of a large-surface board. Each of the three sensors outputs a moisture, temperature, and grammage profile of each board section. At the end of the board, each measuring head outputs the statistical values of the web it has measured. In this way, it is not only possible to control the process individually but also to provide full documentation of the production and of the different drying behavior over the width of the product.







### Software

The devices of the VenScan series are operated with intuitive software. All the work steps you require are simple to perform. The measurement results are displayed clearly.

Calibration can be performed simply and displayed graphically.



#### Calibration

### System configuration

### Settings

- Languages
  - [German, English, French, Spanish, Portuguese, Turkish, Russian, Polish, Chinese, Romanian]
- Analog and digital inputs/outputs, limit values
- Measurement parameters

### Calibration

- Recording of reference measurement points
- Calculation and storage of calibrations



### Measurements

- Continuous measurement of the product moisture
- Measurement data administration/ trend display/ moisture thresholds for alarm functions

#### Visualization and data export

- Graphical display of water content [%] and temperature [°C]
- Setting of display parameters
- Data export from the current day's data set



Measurement value display



### Hardware

The measuring system is optionally supplied with a workstation on which the software, along with further tools (e.g. the latest remote servicing software), is installed. The link to the sensor head is established using a serial interface RS422 or the network [TCP/IP].

The computer of the MoistureScan consists of an amply dimensioned hard disk, a CD/ DVD drive, USB 2.0 interfaces, an integrated network connection LAN [RJ45], and further modern equipment. Windows® XP Prof. and later can be used as the operating system.





Direct link over RS422

## **Online support**

After installation, we start by calibrating the device together with you, we check its function, and we instruct you on a few necessary details. If you need help again later, you can obtain support quickly, even online if you wish, which is fast, inexpensive and environmentally friendly.

From Hamburg, we can check the function of the measuring device over the Internet and perform corrections in direct interaction with you. The highest level of security is maintained during this procedure. You decide whether you want this function and you enable it. The integrated LAN connection can be used for remote servicing. We will also gladly help you on site.





Basic information is provided in the form of a manual. We support you with online support. We are happy to answer any detailed and specific questions.

### **COM** server connection set



Series	VenScan	XL	XXL	TriScan
Measuring range:	depends on the product			
Repeatability:	1% of the limit of the selected measuring range			
Number of measurements:	up to 1000 measurements per second, average values calculated by the software			
Power supply::	24 VDC			
Ambient temperature:	0 - 40°C			
Max. number of different products in a plant:	32			
Data storage:	hard disk			
Max. number of measurement data items:	depends on the hard disk size			
Product thickness:	< 10 mm	< 40 mm	< 100 mm	< 40 mm
Interface:				
- serial:	RS422 interface for connecting the operating terminal			
- analog:	2 x inputs: 4 - 20 mA 2 x outputs: 4 - 20 mA for moisture and temperature			
- digital:	4x inputs- und 3x outputs			
DIMENSIONS AND WEIGHTS:				
- of the sensor head:	250 mm x 250 mm x 500 mm	300 mm x 310 mm x 655 mm	450 mm x 600 mm x 1930 mm	individual
- of the connection box:	Size: 300 mm x 300 mm x 200 mm Weight: 5,5 kg			
Product temperature max.:	90 °C	90°C	90°C	90 °C

Because we are continuously improving the VenScan series, we reserve the right to make changes.



You can find out more about the measurement technology with this QR code. You will also find information on the measurement technology on our web site, short code: https://tinyurl.com/doescher-measure



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