PULP & PAPER

L&W Felt Moisture Meter
Process Measurements

To keep up with the demands on press felts and increase their lifecycle, it's important to obtain complete data on felt moisture content. ABB's L&W Felt Moisture Meter helps optimize the press section by providing press fabric measurements - available with 2D and 3D mapping when used in an online scanner - that can be used to save energy and raw material usage, enhance felt life and performance, and achieve maximum speed and runnability for your paper machine.

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01 L&W Felt Moisture Meter helps detect press felt compacting, crowning, clogging and wear.

Overview

Press felts must be cleaned and conditioned to enable the felt to take water and be de-watered uniformly throughout its lifetime. Having accurate measurement of felt status is therefore imperative for not only a cost-effective and efficient felt conditioning program, but also for maximizing machine runnability—and profitability.

L&W Felt Moisture Meter provides paper mills, felt and chemical suppliers with industry-standard results for felt moisture measurement. By detecting press felt compacting, crowning, clogging, and wear as well as the effectiveness of your felt conditioning, suppliers can provide more precise recommendations and paper mills can extend and optimize performance.

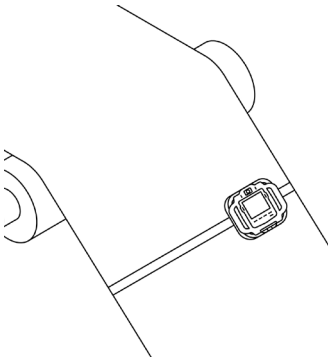
The instrument measures moisture in both machine and cross direction (MD and CD) up to 3000 $gH_2O/m2$, providing 1000 measurements per second. It captures the amount of water inside the void volumes of your felt for further analysis and comparison. When capturing HD data in an online scanner, the software can present both 2-and-3D images.

Features

- Compact, lightweight design
- Proven microwave technology, based on more than 50 years of experience
- Intuitive software user interface provides:
  - MD/CD profiles for regular inspections
  - 2D and 3D-data mapping to safely and easily visualize problem areas at the exact coordinates on your felt
- Graphical Fast Fourier Transformation (FFT) finds peaks that appear at certain frequencies, linking them to machine problem areas
- Enhanced safety and ease-of-use features available for both manual testing and online scanner operation (keyless start/stop)
- No movable parts ensure durability

Benefits

- Overcomes high energy costs in the dryer section
- Improves planning for shutdowns, while also reducing unplanned ones
- Maximizes machine speed
- Optimizes felt conditioning with optimum levels of vacuum, chemical dosage, and high pressure shower
- Enables best overall felt lifecycle performance
- Improves paper quality and reduces sheet breaks
- Enables more informed troubleshooting



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02 L&W Felt Moisture Meter has dedicated scanner functionality in addition to its handheld use.

One device for multiple uses

With more stringent safety requirements and the increased development of online scanners for felt measurement, ABB's purpose was to build a device to use in multiple modes of operation to maximize your investment. ABB now offers one instrument to serve multiple modes of operation; dedicated functionality for manual testing and for use in online scanners.

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03 The L&W PressView 3D PC software has a database for trends and advanced analysis (CD/MD, 2D+3D, FFT, etc.).

L&W PressView 3D software
Working with your data should be done in a user-friendly manner that avoids large instrument menu structures that can lead to mistakes and the need for new measurements. The L&W felt instruments are designed for quick and reliable measurements with a minimum of settings to accurately store the data during operation. Data can then be viewed and worked with more easily and safely on a PC using our new L&W PressView 3D. This software comes with an integrated database for long-term data storage and the possibility of direct data communication with other applications.

3D data mapping for online scanners
For felt suppliers or paper mills that want to understand the condition of the complete felt surface, ABB has adapted their application for 3D data mapping as a dedicated function for online scanner usage. New scanner 3D capabilities include HD data storage and the ability to save only the data that matters without any direct interaction with the instrument. As a result, additional analysis is now possible without the need for any extra work during measurement. There is also a keyless start/stop for easier interfacing and synchronized setup for each scanner.

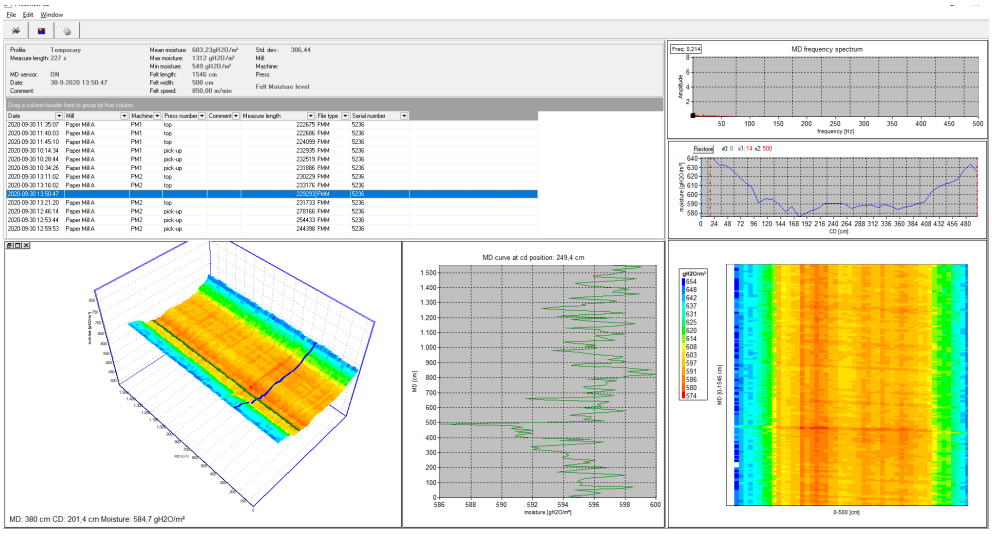
Using Felt Moisture Meter more frequently
Regular measurements with L&W Felt Moisture Meter are key to optimal dewatering in the press section and can help reduce machine disturbances and downtime—leading to big cost savings opportunities.

ABB has found that not only does a 1 percent increase of the dry content in the press section yield a 4 percent reduction in energy use in the dryer section, but also a reduction in vacuum, chemicals, and water consumption. This helps reduce web breaks and ensure extended felt life for quick ROI.

With multiple options for operations, more and more mills are choosing to directly invest in these instruments (including online scanners) to optimize performance and control costs.

Local access to global service organization
As a global supplier with local service organizations in all markets, ABB is the worldwide technical support market leader for paper testing, including both calibration and maintenance services. We provide specialized testing using L&W-specific calibration devices that are regularly certified with traceable calibration from global certification institutes.

Augmenting results with Felt Permeability Meter
Moisture and permeability are of equal importance to understand felt performance and complete proper conditioning. ABB L&W Felt Permeability Meter provides the industry standard for felt surface permeability measurements, detecting clogging and wear. By having a separate instrument to measure permeability, operators can ensure pure results on first and repeated operation.



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04 L&W PressView 3D includes new sliders to quickly focus on the paper zone or felt edge, with easy profile comparisons, as well as 2-and-3D mappings for position-related effects. Here you can see a seam that started to clog.

Technical specifications L&W Felt Moisture Meter, code 877	
Inclusive	L&W Felt Moisture Meter, battery charger with power cable, 12V cable for car, USB cable, reference plate, software CD for PC, user manual, carrying case
Measurement	
Range	0–3000 g H_2O/m^2
Resolution	1 g H_2O/m^2
Measuring area	40 × 40 mm (1.6 × 1.6 in)
Measurement rate	1000 values/s
Measuring series	Max 50
Measuring time/series	Max 30 min
Measurement values	- g H_2O/m^2
Instrument	
Battery type	Li-Ion (capacity min 2200 mAh)
Batter time	Approx. 2.5 h
Charging time	Max 6 h
Memory	128 MB
Input voltage	11-24 VDC
Weight	2.5 kg (5.6 lb)
Display	Color 320 x 240 pixels
Data connections	USB 2.0

Software	
Compatible OS systems	Windows 7 and 10
User program	L&W PressView 3D
Data output	Excel, text-files, jpg and direct data-transfer
Graphical reports	MD & CD Profile info 2D & 3D data mappings Fast fourier transformations
Data storage	Database
Compatible instruments	L&W Felt Moisture Meter & L&W Felt Permeability Meter
Installation requirements	
Operating temperature	15°C – 60°C
Operating humidity	Max 100% RH
Dimensions	285 × 221 × 108 mm (11.2 × 8.7 × 4.3 in)
Aluminum carrying case	384 × 159 × 319 mm (15 × 6.3 × 12.6 in) Volume 0.02 m^3 (7.4 ft^3)
Net weight	7 kg (15.4 lb) includes instrument, carrying case and accessories

ABB AB / L&W.
P.O. Box 4 SE-16493
Kista Sweden
Tel: +46 8 477 90 00

The information provided in this data sheet contains descriptions or characterizations of performance which may change as a result of further development of the products.

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