

Automation Products

# Lorentzen & Wettre Products Paper machine optimization

# Paper machine optimization

Paper manufacturing is one of the most complex industrial processes in the world today. It is, of course, impossible to manually control all the settings of a modern paper machine. The speed of the manufacturing process and the quality requirements of the finished product are such that it is only by using modern measurement and control techniques that it is possible to achieve quality targets.



Lorentzen & Wettre develops and manufactures instruments, not only for quality control of the finished paper but also, for online measurements in the pulp process and in the paper machines forming and press sections.

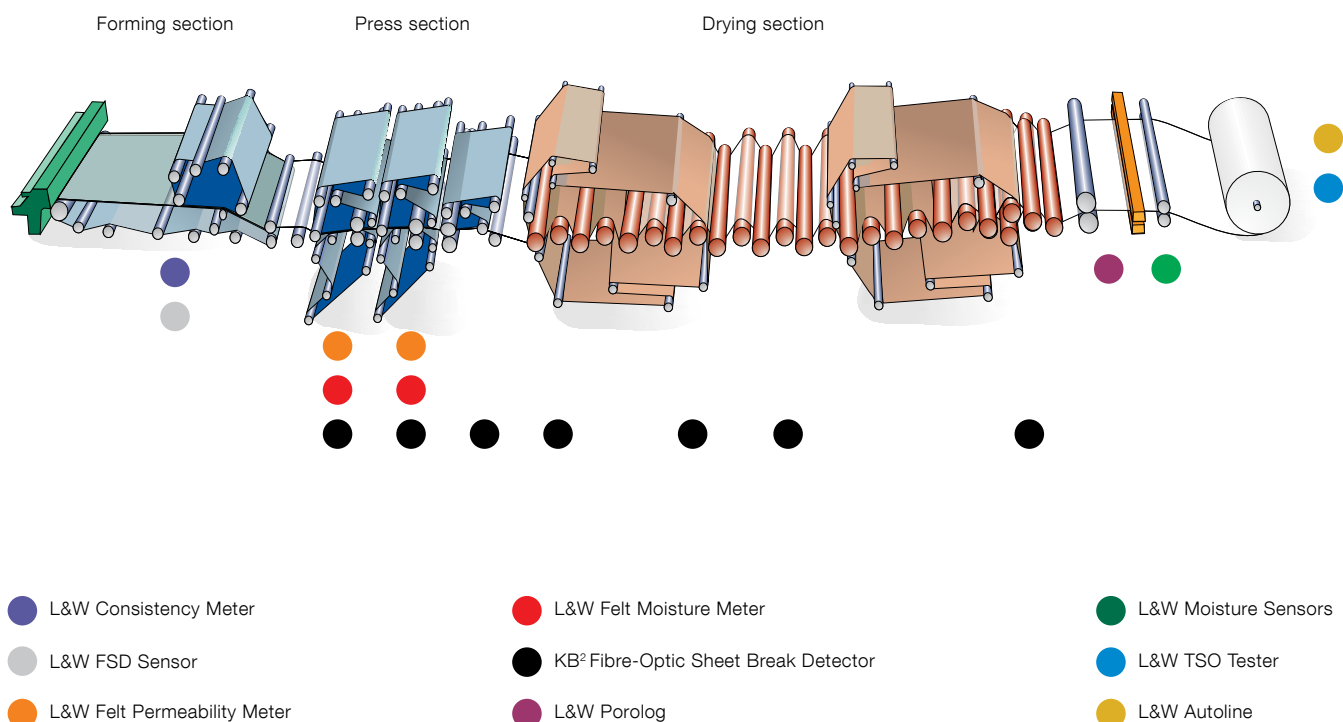
Moisture sensors from Lorentzen & Wettre are used throughout the entire paper manufacturing process; in the forming, pressing, coating and drying sections and are finally applied to the finished paper.

The most common measurements carried out by Lorentzen & Wettre's handheld portable meters are moisture content and felt permeability in the press section. Requirements for measurements of new properties in the process are continually on the increase. This is a trend and a challenge accepted by Lorentzen & Wettre a long time ago, and for this reason we are continuously developing new measuring methods and applications for process optimization.

The combination of Lorentzen & Wettre's knowledge in process optimization and long time experience in the pulp and paper industry, together with ABB's expertise creates a good foundation for improved productivity and quality of the finished paper product.

Paper machine optimization programme – PMOP is a service for troubleshooting, adjusting and fine-tuning the paper production process. The goal of the PMOP is improved paper quality, increased production and reduced costs. Producing the right paper quality at the right cost is essential, but not easy. It is especially difficult with machines that are now producing considerably more than they ever used to. There is a never-ending quest for increased production, better paper quality and lower costs. A lack of success can mean large losses for both the customer and the producer. With the help of PMOP consultants, paper manufacturers can find out where the process can be optimized and how the optimization can be achieved.

## Examples of recommended measuring points:







**L&W Consistency Meter** is a portable instrument from Lorentzen & Wettre, designed to analyse, make more efficient and optimize dewatering in paper, board and pulp machinery. L&W Consistency Meter is used to measure the amount of water at various stages after the forming section, to see if all the dewatering elements are correctly adjusted in relation to the product that is currently being produced.



**L&W FSD Sensors** measures the amount of water at any desired position in the forming section. The measurement results make it possible to gain control of drainage and monitor that important properties as fibre orientation, formation, ply bonding and distribution of fine particles are correct.





**L&W Felt Moisture Meter** is the sixth generation instrument for profile measurements of the water content of press felts. Nearly 40 years of experience and development have gone into the instrument, which combines advanced functionality with usability. L&W Felt Moisture Meter has an array of new functions, such as moisture measurements in MD and CD, higher resolution, and extremely accurate measurement results using exact positioning in the press felt displayed as 2D and 3D images. These features are all intended to help increase productivity.



**L&W Felt Permeability Meter** provides you with the best possible knowledge about the condition of the press felts. This enables you to optimize dewatering and reduce costs significantly.



**KB2 Fibre-Optic Sheet Break Detector** is designed to monitor sheet breaks in harsh environments, it is proven with hundreds of installations around the world. In addition to open-draw applications the breaks can be detected against felt, wire, or even against a cylinder.



**L&W PoroLog** measures the air permeance of a paper web on-line. Whether you use its data as a monitoring tool or integrate it into a process control system – using L&W PoroLog offers cost savings and quality improvement.



**L&W Moisture Sensors** – Lorentzen & Wettre's double-sided and non-contacting measuring sensors (DS) can be fitted on O-frames or C-frames. Microwave based measurements is an advantage when measuring the moisture content of multi-ply products such as boxboard and corrugated board, and when measuring coated paper grades. L&W Moisture Sensors DS are the only sensors on the market that can measure moisture content through all the layers of finished corrugated board.

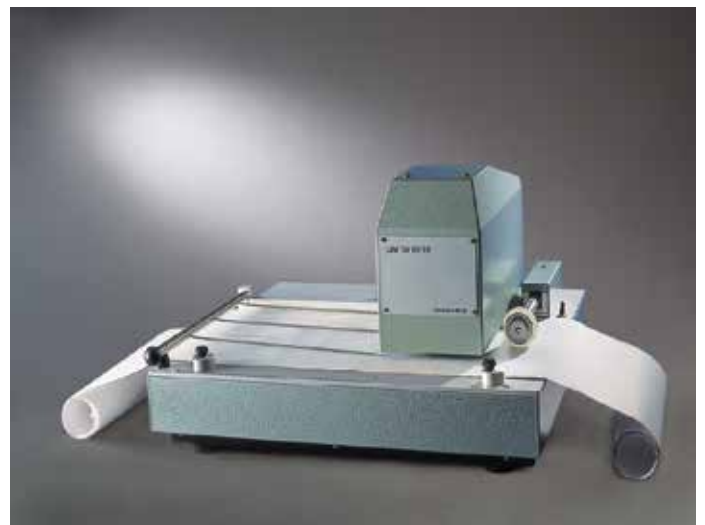


# Standardized paper quality testing for process optimization and control

Today's papermaker relies upon many sources of information and measurement tools to assist in producing a product that meets or exceeds their demands. Although there are many and varied on-line sensors, these are not enough to present a total and clear picture of the paper machine's performance. Quality testing data from an off-machine source is required.



**L&W Autoline 400** is a testing system for paper CD-profiles. The entire profile measurement is performed in an automatic sequence, and the results are presented immediately on a screen or a printer, in graphic form or as tables. Operation is very simple since all the settings can be pre-set. L&W Autoline 400 is configured with measurement modules that can be freely selected and combined for the desired cross-profile measurements. The majority of modules measure according to current industry standards.



**L&W TSO Tester** is an ultrasonic instrument for measuring Tensile Stiffness Index (TSI) and the Tensile Stiffness Orientation (TSO) properties on sheets and cross machine paper samples. In the QC shift laboratory the results are used to predict the performance of paper, in a sheeting process, multicolour printing process, laser copying machines, and corrugated board manufacture. It is also an ideal tool for process optimization, as it allows you to take early action in the headbox, press and dryer, saving raw material, as well as time. Correlation to strength properties such as RCT and SCT can also be performed.

# Contact us

**Lorentzen & Wettre**

**ABB Process Automation Division**

P.O. Box 4

164 93 Kista, Sweden

Phone: +46 8 477 90 00

Fax: +46 8 477 91 99

E-Mail: [info@l-w.com](mailto:info@l-w.com)

[www.l-w.com](http://www.l-w.com) | [www.abb.com](http://www.abb.com)