Projects and Automation Solutions

Honeywell

Crepe Structure Measurement

Experion MX Platform

Experion MX is a fully integrated quality control and process knowledge system that provides superior visibility into the papermaking process while it simplifies your operational efforts and is easy and cost effective to maintain and service. Crepe Structure Measurement is a completely new, unique sensor for Experion MX to optimize creping in real-time for improved production quality and efficiency. Improve paper quality, reduce raw material, energy, services and maintenance costs, and increase production efficiency with a package of solutions that provides the lowest total lifecycle cost available – Experion MX.

Crepe Structure Measurement - Model Q4224-50

Honeywell's Crepe Structure measurement analyzes tissue quality by capturing high resolution images of a moving sheet to identify important variables on creping process. These allow optimization of creping blade life while maintaining consistent quality. Longer blade running time means less blade changes and more quality production without process upsets. The sensor allows mill personnel to monitor tissue structure characteristics online throughout the entire production process, facilitating immediate corrective action if the quality deviates from targeted. Crepe Structure Measurement provides an excellent tool for tissue process optimization, troubleshooting and test runs for selecting optimal chemicals and process operating points in real-time.

The image control unit inside the sensor controls both the camera and the illumination unit for optimal image quality with varying machine speeds. Single-sided construction houses camera and illumination on same side of the sheet. The captured image is analyzed with proprietary algorithms, producing numeric indicators characterizing tissue crepe structure. Imaging and analysis computation are done by sensor processor unit in real-time. Numeric values of the measurements are then transferred to the system server for display, profiling and trending. Captured images are periodically transferred to the Experion MX system server for display.

Features & Benefits

- The sensor measures the following crepe structure characteristics:

    o Folds/length

    o Macro Crepe

    o Micro Crepe

    o Impurity

    o Caliper[1*]

- Sensor module camera and illumination automatically adapts to different machine speeds for the optimal image quality

- Standard sensor modular design allows installation in any slot inside the measuring head

- There are no moving parts in the sensor module, which minimizes maintenance needs and ensures a long lifetime

- Up to four images per scan are available in Experion MX from operator-defined cross direction locations for visual analysis and trouble-shooting

- An "Image Gallery" display shows 8 images each representing reel average crepe structure characteristics. These are displayed around grade dependent reference image for comparison

- In single point operation, images are transferred periodically at a fixed rate for operator observation

Description

The measurement is designed for online use in the challenging tissue machine environment. Fast image capture allows reel speeds up to 2600 m/min (8530 ft/min) without reduction of image quality. The measurement automatically adjusts illumination and imaging parameters for varying speeds. An intelligent operating algorithm mitigates the effect of uneven illumination, ambient light, and dirt/dust buildup. Images are captured and analyzed at the rate of 10 Hz.

Folds/length reports crepe folding per length unit (typically inches or centimeters). This correlates with creping blade wear: new blade produces high folds/length and worn blade low values. Macro and Micro Crepe indicate folding types categorized as in long and short wavelengths. Caliper indicates crepe dominant sheet thickness. With new blade macro and caliper are typically low and micro high. As the blade wears, macro and caliper will increase and micro decreases.

The system displays the latest captured surface image to operator for visual analysis.
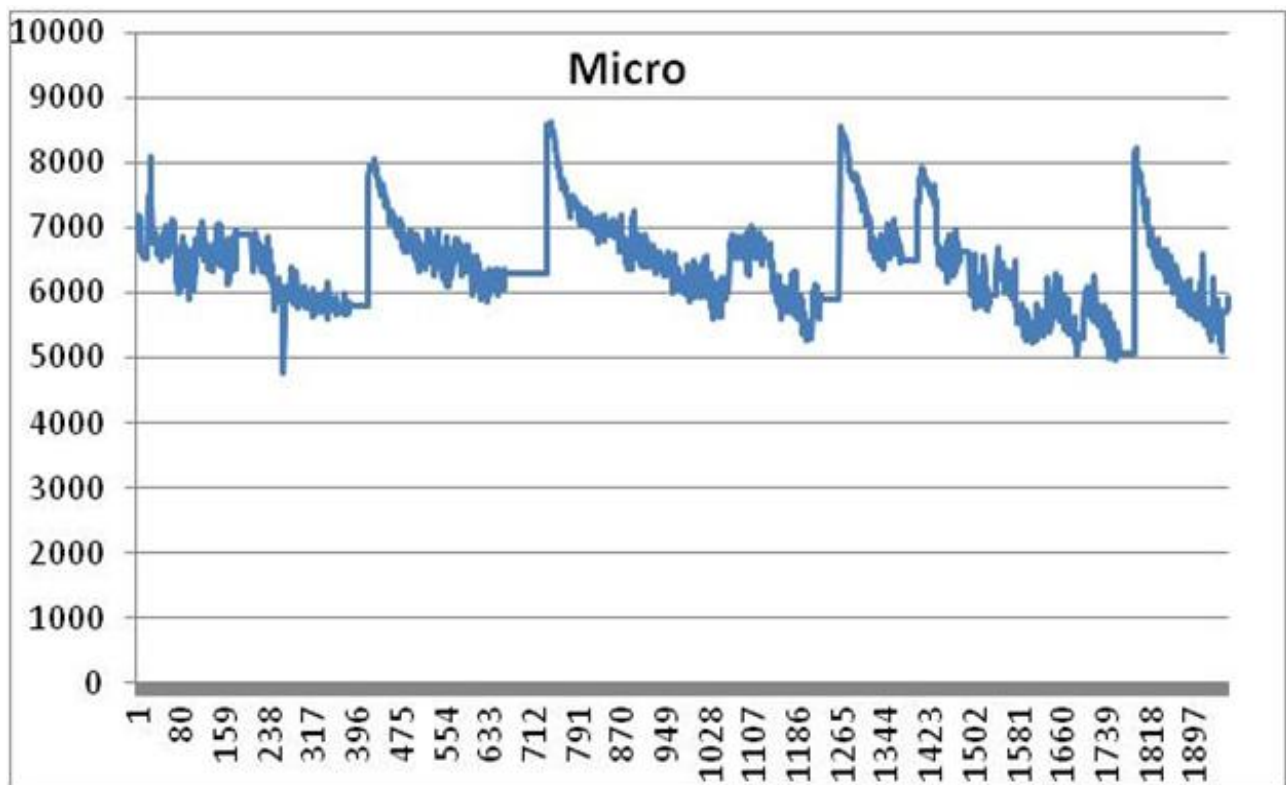
1* Application dependent additional measurement
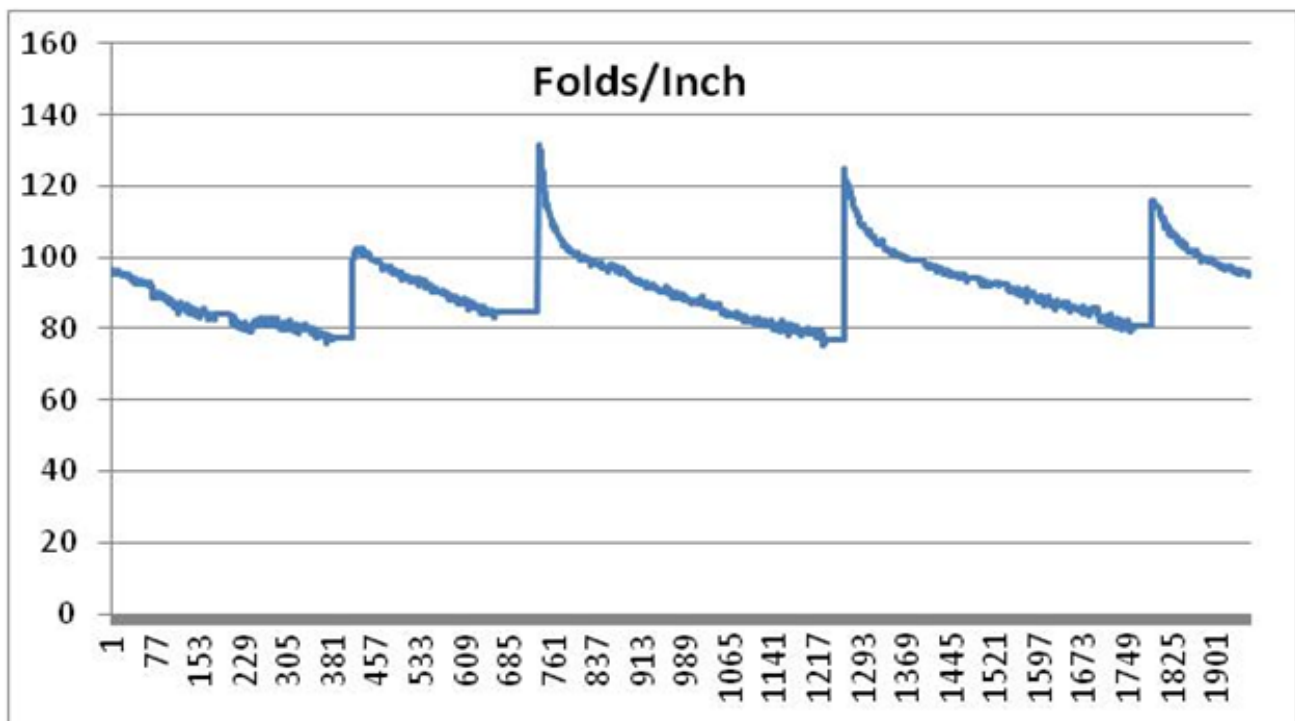
Folds per inch. Upward peaks occur after creping blade change
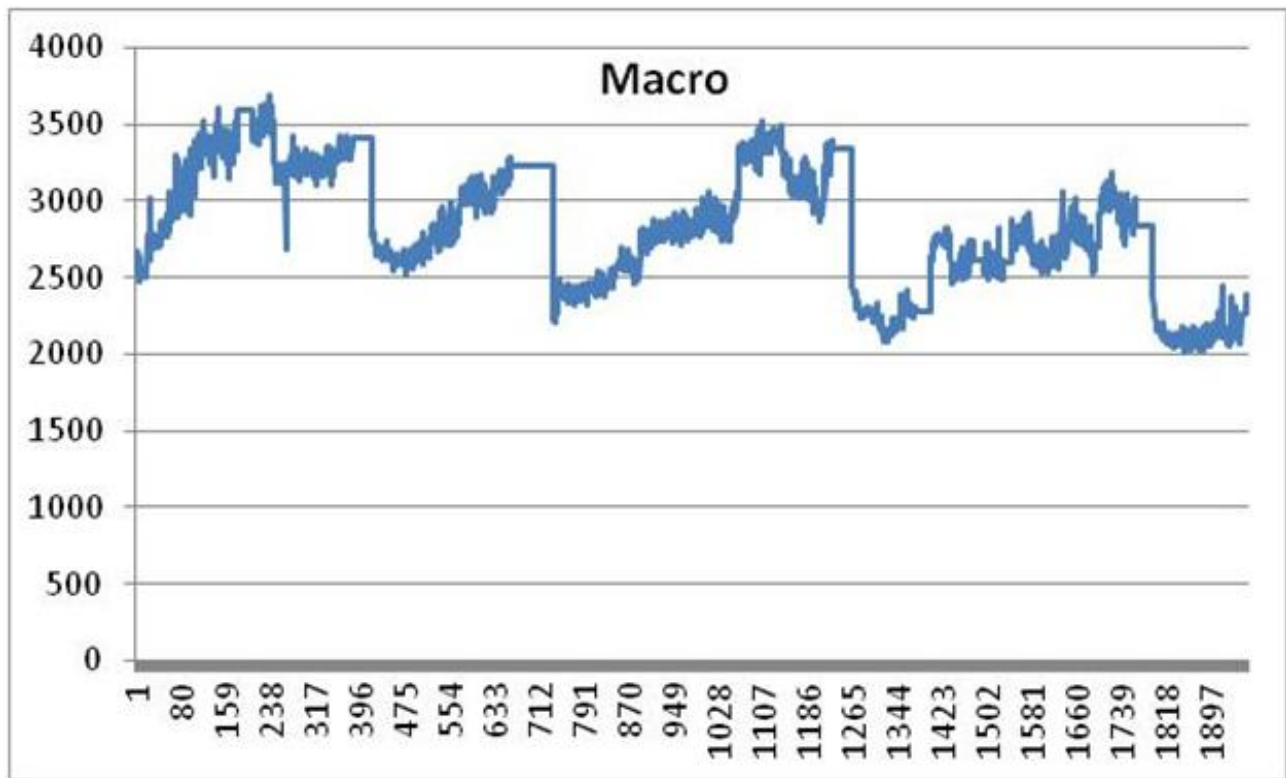
Macro Crepe. Reading drops after creping blade change

Micro Crepe. Reading jumps up after creping blade change

Specifications, Model Q4224-50

Category	Specification		
Measurement range	Folds/Lenght	Range 0 - 2000	
	Macro Crepe	Range 0 - 50000	
	Micro Crepe	Range 0 – 50000	
	Impurity	Range -100 - 100	
	15 x 15 millimetres		
Measurement speed	10 hz		
Maximum ambient temperature	See scanner and measuring head enclosure specifications		
Machine speed range	0 – 2600 m/min		

For More Information
For more information on Crepe Structure Measurement, visit www.honeywell.com/ps or contact your Honeywell account manager.

Honeywell Process Solutions
Honeywell
1250 West Sam Houston Parkway South
Houston, TX 77042

Honeywell House, Arlington Business Park
Bracknell, Berkshire, England RG12 1EB UK

Shanghai City Centre, 100 Junyi Road
Shanghai, China 20051

www.honeywellprocess.com

Honeywell