



- OVERVIEW
- CONTROL SUMMARY
- MACHINE CONTROL
- STATS
- PROFILES
- LARGE DISPLAY
- SPEED/DRAW
- TRENDS
- REPORTS
- GRADES
- MAINTENANCE
- CD MOISTURE
- ALARM

## CROSS DIRECTION MOISTURE PROFILE CONTROL

The Cross Direction (CD) Moisture Profile Control provides a cost effective solution to upgrade scanning moisture measurement systems to closed loop cross direction (CD) profile control using steam showers or water sprays. The system works with the cross direction profile obtained from the scanning moisture system, generates the actuator profile and sends control outputs to the actuator module. The control strategy uses the moisture profile to calculate moisture deviations from average for each control position. The number of positions are mapped to the number of zones in the actuator. The control algorithm optimizes the use of steam or water and provides manual override for each or all of the positions. Full colour video displays provide an interactive and friendly operator interface.

FEATURES	BENEFITS
<ul style="list-style-type: none"> <li>• Standard operating system</li> <li>• Individual zone control</li> <li>• Standard hardware</li> <li>• Selectable outputs</li> </ul>	<ul style="list-style-type: none"> <li>• Number of control positions matched to the application</li> <li>• Manual backup</li> <li>• Low maintenance cost</li> <li>• Can be interfaced to any control actuator</li> </ul>

## Scanner and Sensor Interface

The scanner and sensor interface collects analog sensor and scanner data from the moisture measurement system and builds the moisture profile to suit the papermachine an actuator requirements. The interface is driven by an industry standard programmable logic controller (PLC) and provides the programming flexibility to adapt to most measurement systems. Transmission of profiles to the operator station is done through the Ethernet network. The PLC and supporting electronics form a compact unit for ease of installation and maintenance.

## Operator Station

The operator station performs the cross direction control and operator communications functions. Operator displays are built on a windows-based environment and feature optional touchscreen facility. Typical video displays include moisture and actuator profile in one page. Operator can select manual or automatic control for any or all of the actuator positions. The station consists of a standard PC and colour video, equipped with interface card for communications with the scanner/sensor interface and cross direction control module. The application is configured in iFIX™ SCADA HMI program and runs under Microsoft Windows XP™ a multitasking and network operating system for industrial applications.

## CD Moisture Control Module

The cross direction moisture control strategy resides in the computer and uses the moisture scan average to establish deviations for each control position. The proportional control of each position is dependent on the deviation and amplitude of variation from the average. For steam box control, steam is added to areas of high moisture to reduce the fluid viscosity and increase water removal. Computer control actions are generated to drive individual actuator zone positions through a DCS or PLC-based module. The control program includes steam optimization algorithm to ensure efficient steam or water usage.

## Specifications

**Input:** CD Moisture profile and scanner position, sheet break input.

**Output:**

OPC network communication to DCS

Industrial Ethernet to PLC such as Ethernet/IP, ModBus Ethernet

**Number of positions:** customizable to match actuator and machine trim.

**Profile resolution:** up to 256 points.

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