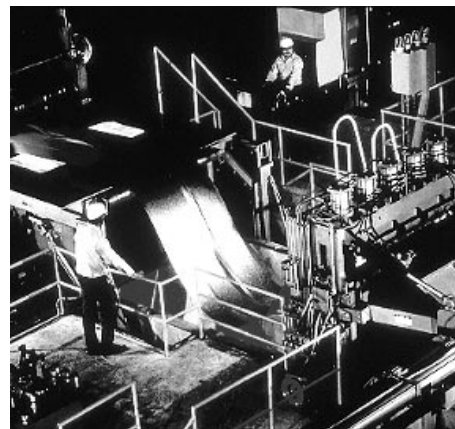


Control Solutions for Pulp & Paper Processing



Improving process control is an economical way to increase throughput, lower costs and guarantee consistency and quality. ABB Instrumentation offers a complete family of Integrated Process Controllers (IPCs), including MOD 30ML and MODCELL Multiloop Processors, for all types of processes in the pulp and paper industries, from the simplest of PID control to the most demanding control applications. Below are some of the control problems that can be solved with Integrated Process Controllers:

Batch digester - Digester pressure and steam flow control the steam valve through a low selector, with external feedback to prevent windup. The same IPC provides control of cook cycle time and heat/cool ramping with individually guaranteed ramp and hold (soak) segments. The MOD 30ML also incorporates a local operator interface for alarm indication and cycle parameter entry.



Total Solutions for the Process Industries

Cooking liquor metering - A learn system compensates for "trickle" left in pipes after valve shutoff for increasing accuracy on subsequent batches, resulting in higher pulp yields, better overall quality, and lower operating costs.

Pulp consistency - Adaptive gain and integral features allow accurate consistency control during load changes. Adaptive tuning can be applied to basic feedback, cascade, or ratio control loops on storage tanks, machine chests, and stock blends.

Blow Heat Recovery - Complete condensation of flow steam is ensured by maintaining condensate temperature and controlling the circulation pump. The same device also incorporates the condensate temperature control loop and the limit switch input from the spray control valve. Stored hot water temperature and hot water storage tank level are controlled, with override to prevent overflow of hot water storage tank. External feedback on temperature controller prevents reset windup during periods of large water usage. Adaptive tuning compensates for varying loads during and between blows.

ABB Instrumentation



Black liquor evaporator - Continuous, on-line feedforward calculations on feed rate and/or feed solids content (density) can improve performance. Advanced control based on heat input and mass balance can be implemented using easy-to-configure math expressions.

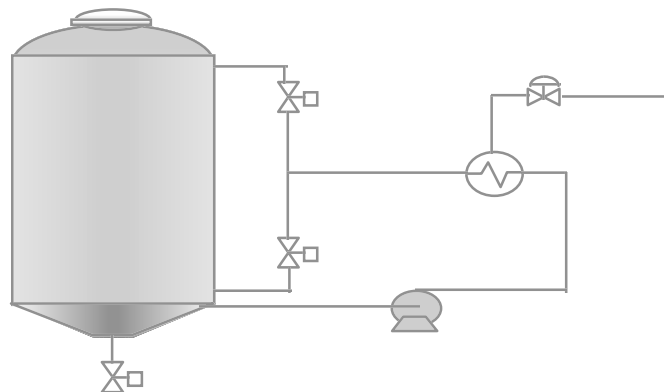
Recovery Boiler and Process Steam Boiler - Integrated Process Controllers guarantee minimum investment and optimum control for 3-element drum level, combustion control with oxygen trim, and burner management.

Lime Kiln - Setpoints can be calculated from energy balances or inlet feed. Cold end temperature sets oil and gas flow and provides calculated input to energy calculation. Hot end temperature adjusts oxygen which in turn sets primary air pressure to adjust damper. Override is provided on the damper controls.

Bleach plant - Integrated Process Controllers can calculate chlorine setpoint based on measure of lignin content and pulp flow, the feedback correction of ORP, the calculation of sodium hydroxide flow based on chlorine or residual chlorine and feedback correction with pH.

Stock preparation - One controller can provide dilution or mining water control and consistency trim control. Adaptive reset on deviation and adaptive gain on deviation in the respective control loops compensates for load changes.

Paper machine dry end - MOD 30ML and MODCELL Multiloop Processor IPCs easily handle interactive pressure loops through split-range valve control.



In addition to the Integrated Process Controllers, ABB Instrumentation can provide a full range of products for pulp and paper applications, including flow elements, pressure transmitters, pH analyzers, MassMeters and panel-mounted controllers. Designed specifically for use with paper pulp, paper stock and other slurries, MagMaster magnetic flowmeters provide stable readings and unsurpassed accuracy and repeatability. Integration of ABB Instrumentation products with ABB Drives allows you to take advantage of the benefits of using a VFD as the final control element. For larger or millwide applications, Advant OCS (Open Control System) offers superior distributed control, operations and information management solutions in a workstation environment.



ABB Instrumentation Inc.
P.O. Box 20550
Rochester, New York 14602-0550
Tel: (716) 292-6050
Fax: (716) 273-6207

ABB Kent-Taylor Ltd.
St. Neots Cambs.
England, PE19 3EU
Tel: (01480) 475321
Fax: (01480) 217948