SPARTANPRO™ PULP AND PAPER SOLUTIONS

For nearly 20 years, Spartan Controls' Process Solutions group has been helping pulp and paper customers get more for less out of their processes through the application of advanced process control (APC). By stabilizing and continuously optimizing the most challenging and complex processes in the industry, APC achieves proven operational benefits that include:

- *Increased Throughput*
- *Reduced Cost of Operation*
- *Faster Start-up Times*
- *Improved Consistency of Operation*

- *Increased Energy Efficiency*
- *Increased Process Stability*
- *Reduced Risk of Trips & Failures*
- *Reduced Upsets to Downstream Processes*

Most North American mills have been operating at low to moderate profit margins for decades with mature work practices and seasoned operators. The mills are used to dealing with a high degree of variability in feed rates, feed quality, and moisture content while running equipment at or beyond its designed operating capacity. Despite the maturity of the industry, the lack of insight into the process often leads to over-cautious operation, higher operating costs, or excess downtime.

The SpartanPRO™ library of pulp & paper processing solutions have been developed and tested in these live, harsh mill environments to effectively automate challenging processes and deliver real financial improvements. Our solutions cover a wide range of the complex unit operations commonly used in mill operations. Customers using our solutions have realized net, measured benefits including **throughput increases of up to 5%; energy consumption reductions of up to 10%; and operating cost reductions of up to 6%.**

Our library of solutions is designed to integrate seamlessly with existing operational philosophies, graphics and control strategies. If a DeltaV DCS is on site, no third-party software or hardware is required by leveraging the variety of high-powered APC tools directly embedded in DeltaV. With **typical payback periods of 1-12 months,** *these solutions tackle some of the biggest challenges on site today to bring your operation to the next level.*

www.spartancontrols.com

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SPARTANPRO™ PULP AND PAPER SOLUTIONS

SpartanPRO™ **Refiner**

Reduce energy consumption, improve throughput capacity, reduce plate-clash frequency, and improve freeness variability.

SpartanPRO™ **Kamyr Digester**

Increase throughput capacity by up to 5% while reducing kappa variability and white liquor consumption through coordinated control of digester operation.

SpartanPRO™ **Brownstock**

Optimize washing and increase throughput capacity to achieve the lowest combined cost of evaporation and bleaching with the ability to shift washing load to avoid bottlenecks.

SpartanPRO™ **Bleach**

Optimize brightness and pH control to produce a stable final brightness and reduce overall cost by up to 5%. Available for both Kraft and Mechanical bleaching processes.

SpartanPRO™ **ClO$_2$ Generator**

Improve chlorine dioxide generation efficiency, stabilize ClO$_2$ strength and reduce reagent costs by up to 4% while ensuring safe, stable operation.

SpartanPRO™ **Machine MD**

Reduce the variability of sheet air dry and basis weight by up to 80% while increasing throughput and reducing dry-end sheet breaks.

SpartanPRO™ **Evaporators**

Reduce net steam consumption by up to 5% while producing a stable, consistent heavy black liquor strengths. Includes concentrators.

SpartanPRO™ **Sootblower**

Decrease cost of steam by 5% through intelligent, automated soot-blowing that selectively focuses on the most problematic sections.

SpartanPRO™ **Power Boiler**

Increase steam generation efficiency, improve hog combustion stability, and reduce steam supply variability by coordinating combustion and air flow with changing hog quality, moisture, feed rate, and steam demand.

SpartanPRO™ **Energy Management**

Maximize profitability from power generation with real-time optimization of boiler fuel allocation, steam transfer & venting, turbine management, and other steam sinks based on live market power pricing and fuel costs.

For further information, contact your local Spartan office.

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SPARTANPRO™ PULP AND PAPER SOLUTIONS
(continued)

SpartanPRO™ **Slaker**	*Increase causticizing efficiency to reduce system deadload, offload the evaporators, and produce stable white liquor while protecting against overliming and boil-over.*
SpartanPRO™ **Pressure Filter**	*Maximize throughput capacity, produce a stable white liquor and mud density, and reduce plugging frequency.*
SpartanPRO™ **Kiln**	*Reduce energy of operation by up to 5%, increase throughput capacity, stabilize lime quality, and decrease the risk of brick loss or ring formation.*

SmartProcess™ PULP AND PAPER SOLUTIONS

These industry solutions have been developed and mill-tested by Emerson across North America. Spartan's Process Solutions team can work with Emerson to customize and deploy these solutions at your mill today.

SmartProcess™ **Batch Digester**	*Maximize throughput capacity and stabilize cook consistency with this automated batch digester solution.*
SmartProcess™ **Steam Header**	*Prevent major process upsets and trips by stabilizing steam headers with coordinated management of turbines, vents, pressure relief valves, boilers, and steam sinks.*
SmartProcess™ **Boiler**	*Optimize combustion efficiency in your Recovery or Package boilers with effective combustion controls based on excess oxygen.*

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