



Quad Plus®

Pulp and Paper Automation and Production Services

Increasing Productivity for Pulping and Papermaking



You have to respond to the challenges of the pulp and paper industry: tightening competition, operations and raw material price increases, and compliance with strict environmental and safety regulations. It is important for you to automate and optimize your paper and pulping processes, extend your current equipment's lifespan, while keeping improvement costs and shutdown time to a minimum.

What is necessary to maximize safety and increase productivity while reducing energy and lifecycle costs? Seamless engineering solutions. Quad Plus can meet the demands of your pulp and paper production processes.

Pulp and Paper Application Challenges

Web Handling Defects

Solving web breaks, reeling wrinkles, slippage, and paper defects at their source can reduce the risk of emergency stops and off-spec product rolls. Evaluating web tension and speed differentials, both in the winder and throughout the paper machine, can help diagnose and prevent flaws. Integrating real-time measurements can ensure that moisture content, web profile basis weight, and thickness parameters are within the target range.

Production Bottlenecks

Bottlenecks can significantly limit your overall production capacity in both the paper machine and winder. Slowdowns and limitations can take the form of manual slitter adjustments, outdated control technology, equipment capacity limitations, vibration issues, and inefficient drive systems. Such issues need to be identified through machine data analysis and then addressed through automation, design, optimization or control processing, and replacement of legacy equipment where necessary.

Safety and Standards

Mitigating hazards and meeting environmental standards are critical steps to improve the safety of your personnel. Additionally, such changes can reduce liability issues and improve production capacity. For example, implementing changes that meet TAPPI and IEEE standards, automating slitter positioning, automating web threading functions, and adding safety features like guarding, fencing, and safety controls can dramatically reduce risk to personnel.

Pulp and Paper Process Design and Automation



Implementing new process control methodologies can address inefficient actions throughout the entire papermaking process. The results can include extending the life of your existing equipment while reducing changeover times, increasing speed, capacity, and productivity, and stabilizing product quality control.

Automating paper grade and parent reel changes, slitter adjustments,

and blade changes can have a significant impact. Plus, rebuilding inefficient sections of the line can supply measurable returns on your investment. Automating risky manual processes also increases overall safety. Your personnel can manage recipes, paper grade changes, and slitter adjustments from outside the paper machine and winder.



Operational and Performance Assessments for Pulp and Paper

Risk Assessment and Safety Validation

Pulp and paper operations are inherently dangerous due to the high speed and rotation of machinery, wet and slippery conditions, slitting and cutoff knives, and high temperatures. For new installations, before rebuilds, or after accidents, a safety audit should be completed to identify issues and suggest changes that can mitigate operator exposure to hazardous conditions. Where possible, automation can manage protection systems and prevent unauthorized programming changes that result in unsafe operations. Validation includes physical testing of line operations to ensure that the expected outcomes are observed.

Remote Support and Onsite Repair

Support is critical to minimizing downtime. We offer a variety of options for support of your plant systems. Using secure digital access, we can provide remote diagnostics and adjustments for faster troubleshooting and less down time. If onsite resolution is necessary, our onsite service personnel can be dispatched to your paper or pulp mill with the appropriate tools and parts for rapid repairs. We also offer coordinated drive repair and industrial circuit breaker repair at our location. Plus we partner directly with control system part manufacturers to save you time and money.

Power Studies

Reducing energy consumption throughout the papermaking process allows your mill to meet united states government energy regulations and decrease production costs. Electricity usage management ensures consistent energy availability at an optimum level for all equipment in the entire mill and improves secondary reactive energy control.

Pulp and Paper Line Optimization

You've already optimized a section of your line hoping to increase capacity, but then begin experiencing a bottleneck or slow down of subsequent segments. To resolve these unintended consequences, the entirety of the web handling process should be evaluated to determine where improvements must be made.

The evaluation starts with an understanding of all current control systems and process capabilities, new technology potential, and the different characteristics of the product as it feeds through the machine. Then, using advanced process control modeling, solutions can be designed to mitigate control speed differentials that accrue at different sections. The result is to maximize the efficiency of paper manufacturing without causing unforeseen issues further down the line.

Motor and coordinated drive systems should be selected and designed for each section based on normal running load (NRL) and recommended drive capacity (RDC) calculations. Sectional motors load-sharing capabilities also contribute to determining the power required to account for speed differentials in other sections.

Control systems must monitor, process, and respond to operating condition variations in each section. Removing slowdowns and bottlenecks to the winder is critical to optimize performance. High speeds, adjusting motion control, precision tension, and efficient control communication are necessary capabilities. These allow for rapid, dynamic changes to speed and torque while ensuring the product is unwound from parent rolls, slit, trimmed, and rewound without damage.



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