

The Siemens logo is displayed in a white box in the top left corner of the image. The background of the entire advertisement is a photograph of a large industrial paper mill. In the center, a massive roll of white paper is being processed by machinery. To the left, there are large red rectangular components, likely part of a drying or heating system. The facility is filled with complex piping, metal walkways with railings, and various industrial equipment. The lighting is bright, typical of a large indoor industrial space.

SIEMENS

Increase efficiency. Improve quality.
Reduce energy consumption.

With SIPAPER – the tailored products and solutions
for the pulp and paper industry

[siemens.com/paper](https://www.siemens.com/paper)

Answers for industry.



“We’ve Improved our Competitiveness.
Thanks to SIPAPER.”

Pulp and paper has been one our most important business focal areas for more than 100 years. With the SIPAPER product family, we offer perfectly coordinated solution modules to meet today’s requirements and those of the future – with advanced technology for optimal efficiency, maximum plant availability, and long-term security for your investment. This means highest quality at minimal costs, and sustainable efficiency. Develop your full potential – with SIPAPER.



Sustainable improvement

Cost pressure, increased quality requirements, environmental regulations, lower margins, and intense competition are creating an increasingly tough environment for manufacturers. To survive in global markets, they need to fulfill – and exceed – these requirements.

Individual measures are not adequate here because most of these challenges involve the entire process chain. What you need is a concept that offers you perfectly coordinated performance modules. SIPAPER offers you exactly this: a portfolio of precisely aligned solutions that can be tailored exactly to fit your processes. This enables you to reduce your costs and comply with strict environmental regulations, and at the same time also significantly increase the productivity, energy efficiency, and availability of your plant, thanks to our SIPAPER technology.

SIPAPER can provide exactly what you need to boost your business – either as a high-performance individual module or in conjunction with other SIPAPER products. It offers a sustainably competitive solution for your processes, which

- raises your productivity
- increases your availability and minimizes downtimes
- improves the quality of your products
- reduces the number of rejects
- optimizes your energy requirement



“Higher Throughput with an Integrated Solution. Thanks to SIPAPER.”

Exchanging individual components is one way to increase the competitiveness of your plant. But to ensure that your plant remains sustainably competitive, you need a well thought-out concept that integrates all components in an efficient and above all reliable system. SIPAPER offers you precisely that – perfectly coordinated modules for all stations of the production processes in the pulp and paper industry.

We optimize more than just the hardware

A permanent increase in your productivity and quality doesn't just happen. It requires a reliable basis, which we create with world-leading technology in the areas of drive technology, automation, and power supply. We further build on this basis with perfectly matched modules for the pulp and paper industry.

This is because we don't restrict ourselves to merely replacing individual hardware and software components in the areas of plant technology, automation, or industrial IT with more efficient ones. Instead, our objective with SIPAPER is to improve the entire process chain.

Perfectly integrated

Your advantage: With SIPAPER, you have a powerful system that enables you to optimize all production operations in the paper industry. There are no interface problems at all, thanks to the modular design of the SIPAPER products. This gives you exactly the performance you need, exactly where you need it. It covers every aspect – from process and quality optimization to the right drive concepts to the solution for your entire energy management and tailored maintenance optimization.



Pulp and paper production is a complex system of consecutive process steps. A good example is the paper machine, which incorporates a large number of individual drives. For this, we offer a highly efficient, optimally coordinated solution through our integrated multi-motor drive, which can also be integrated perfectly into the process management.

Integration beats interface technology

With the SIPAPER drive family, Integrated Drive Systems (IDS) covers all voltage frequency converters, motors, couplings, and gear units from a single source of supply, for every performance class, every torque range, and all voltage specifications from a single source. All these components are perfectly coordinated and work together smoothly in the drive system. Above and beyond these standard solutions, we can also customize configurations to provide drive trains tailored to your precise needs.

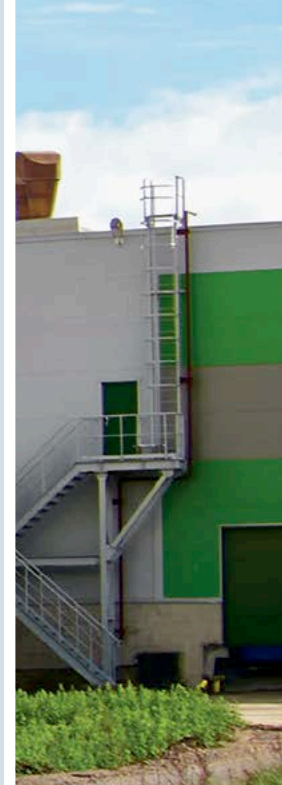
Harmony delivers better results

Integrated Drive Systems can be seamlessly incorporated into every automation environment over the entire life-cycle, thereby reducing time-to-market and time-to-profit.

At the same time, you can harness the entire productivity potential of a harmonized technology landscape, improve energy efficiency, and profit from reliable system performance in widely varying automation environments.

Faster route to success

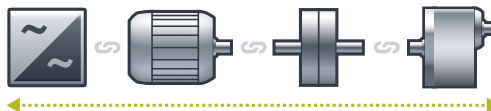
Integrated Drive Systems proves that the whole is greater than the sum of its parts. Our holistic approach enables you to drastically improve the key performance indicators at your plant. For example, you can substantially reduce construction times with the advantages of the PCS 7 for vertical integration. IDS offers you further cost advantages through simplified maintenance of the entire system, with everything from a single source. Can there be stronger arguments?



Horizontal integration

Integrated drive portfolio:
All frequency converters, motors, couplings, and gear units come from a single source.

Perfectly integrated, perfect in interaction. For all performance classes. As a standard solution or as a totally individualized solution.



You can boost the availability of your application or plant – by up to

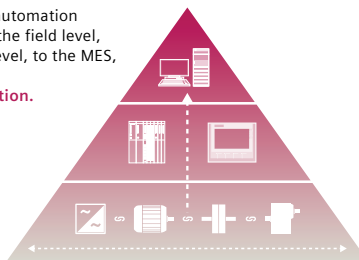
99%*

*for example for conveyor applications

Vertical integration

Integrated in the automation technology: from the field level, to the controller level, to the MES, thanks to PCS 7.

For every application.



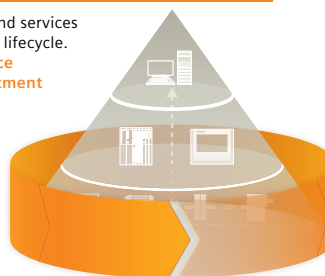
With PCS 7, you can cut your engineering time – by up to

30%

Lifecycle Integration

Integrated software and services throughout the entire lifecycle.

For more performance and maximum investment security.



Thanks to Integrated Drive Systems, you can cut your maintenance costs – by up to

15%



The SIPAPER portfolio

World-class products

Drive Technologies
e.g. SINAMICS, SIMOTICS

Industry Automation
e.g. SIMATIC

Power Transmission & Distribution
e.g. SIMOCODE, SIVACON,
SIPROTEC, SENTRON
Industry Services

Customer Services
e.g. SIMAIN Field Services and Online
Support, Energy and Environmental Services,
Integral Plant Maintenance

+ perfectly coordinated, industry-specific IDS* modules

SIPAPER Drive systems

SIPAPER
Drives APL
SIPAPER
Winder APL



SIPAPER Process automation

SIPAPER
DCS APL
SIPAPER
QCS APL
SIPAPER
APC
SIPAPER
IT MIS



SIPAPER Power distribution

SIPAPER Power



Technical based services

SIPAPER
Services



Integrated SIPAPER APL solutions

*IDS = Integrated Drive System



“Highly Efficient Drive Systems Have Reduced our Power Requirements. Thanks to SIPAPER.”

If the product quality required in international competition is no longer possible to achieve with existing technology, when constant cost pressure squeezes investment budgets, and rising energy and raw material prices leave less and less room to maneuver, there is only one solution that makes sense: increasing the system performance with specific investments in your control technology and in modern, energy-efficient drive technology.

SIPAPER Drives APL – our drive is your success

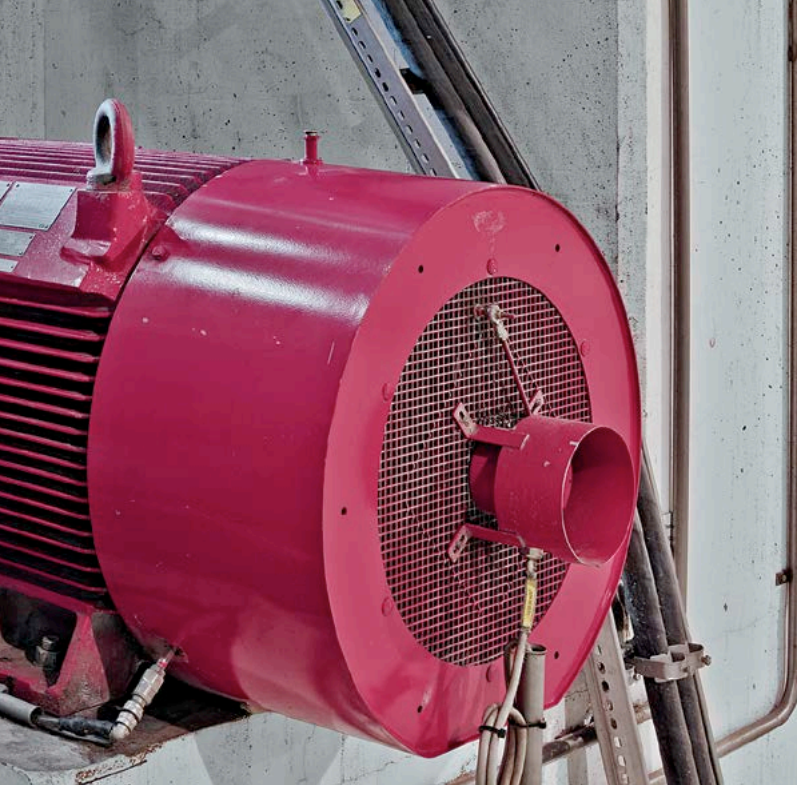
Achieving consistent paper quality with continuously increasing throughput and greater diversity of grades are central challenges facing the pulp and paper industry. To meet these challenges, the functional modules of the Advanced Process Library of SIPAPER Drives APL offer open-ended, modular drive solutions. The range of applications of SIPAPER Drives APL extends from partial modernization right through to complete turnkey solutions.

Whether it's through improved automation on the basis of SIMATIC PCS 7 or through the use of more energy-efficient SINAMICS drives – with SIPAPER Drives APL, you can bring your plants up to peak performance.

Save energy with no loss of performance

If your objective is to specifically improve the energy efficiency of your plant, SIPAPER Drives APL, with gearless drives coupled directly to the machine, provide you with a solution that also minimizes maintenance costs. The perfectly harmonized interoperation of control system and SINAMICS frequency converters offers you other advantages as well. Not only can you observe and monitor your processes more effectively, but you can also take advantage of the highly dynamic characteristics and control accuracy of modern three-phase motors.

The result: The SIPAPER Drives APL software standard, with its industry-specific control and diagnostic functions, ensures production with maximum availability. In this way you achieve optimum control quality and significantly reduce the risk of web breaks.



SIPAPER Winder APL – efficiency and flexibility

SIPAPER Winder APL is an intelligent, modular solution that offers you the opportunity to bring your finishing machines and reel slitters up to peak performance and efficiency. Thanks to highly developed technologies, the modular system offers you maximum flexibility with everything from partial modernization to complete turnkey solutions, from simple rewinders to complex reel slitters, and from long-serving, proven winders to high-end machines of the latest generation.

Everything under control: for more productivity

With our proven, perfectly coordinated components and standardized technology modules, you can also integrate higher-value control functions with minimum engineering input. And with the industry-specific control and diagnostic functions of SIPAPER Drives & Winder APL, you also benefit from high-availability paper production with optimum quality across all plant components, from the paper machine to the finishing machine and reel slitter.

SIPAPER Drives APL and SIPAPER Winder APL comply with all legal safety requirements as standard.

Your advantages:

- Energy-efficient system design optimized to prevent system perturbation
- Reliable, technologically advanced components
- Modular construction, scalable and expandable
- Highest operating reliability and availability
- Low spare parts and maintenance requirement
- Increased throughput, reduction in web breaks
- Identical software basis for paper machines, coating machines, and finishing machines
- Uniform control system for drives, power, and process control
- Proven components, optimum availability
- Global service from a single source throughout the entire lifecycle
- First standardized safety solution, which fulfills the demanding requirements of EN 1034



“We Optimized our Processes and Improved the Quality. Thanks to SIPAPER.”

Perfect integration of individual products is the special strength of the SIPAPER family. For example, when it comes to optimizing process automation and monitoring and improving the quality of the products. With DCS APL and QCS APL, SIPAPER provides you with solutions that are the perfect fit for your company.

SIPAPER DCS APL – transparent automation

Integration instead of an individual solution: SIPAPER DCS APL (DCS=Decentralized Control System) is based on functional modules that have been developed specifically with and for the paper and pulp industry, supplemented by functions of the Advanced Process Library (APL). SIPAPER DCS APL combines the entire process chain of your paper factory in a single, integrated automation system. Interface problems and increased maintenance and operating costs for inconsistent individual systems are now a thing of the past. SIPAPER DCS APL offers you a scalable, uniform automation solution from the field level all the way through to the ERP level.

And thanks to the easy-to-operate and open-ended system, you are assured of lasting cost advantages – a key factor for surviving successfully against global competition.

Your advantages:

- Uniform automation solution for all technical systems, based on world-leading components
- Increased efficiency and competitiveness
- Future viability and investment security
- Global support throughout the entire lifecycle
- Proven components, optimum availability



SIPAPER QCS APL – the quality is spot on

End-to-end quality management with transparent monitoring and control systems forms the basis of all modern paper production. SIPAPER QCS APL (QCS = Quality Control System) offers you exactly that. Quality-relevant measurement data from the paper machines is recorded continuously via a reliable PROFIBUS connection and adjustments are made by activating the correct regulator control elements.

That means you can minimize variations in quality quickly and reliably and continuously optimize the paper quality. SIPAPER QCS APL is integrated in the overall process along with SIPAPER DCS APL.

Your advantages:

- Systematic quality assurance, integrated in the SIPAPER family, directly at the paper machine
- Integration in standard automation system on the basis of SIMATIC PCS 7
- Rapid elimination of variations in quality
- Simplified, fast change of grade for higher output

SIPAPER IT MIS – perfectly informed

As an open management information system, SIPAPER IT MIS (Management Information System) links the real-time environment of your automation system with your business systems. SIPAPER IT MIS monitors and controls the various different production steps in real time. Thanks to the combination of standard modules for your specific processes, SIPAPER IT MIS provides the highly flexible, scalable information management system you need for lasting success.

Your advantages:

- Transparent overview of the production process in real time – for informed decision-making
- Universal connection to all automation and ERP systems
- Fast access through archiving, display, and analysis by one system
- Standardized and uniform documentation



“Tailor-made Process Control Means more Economic Production. Thanks to SIPAPER.”

The paper industry is facing major challenges: the need to manufacture high-quality products while at the same time keeping costs for raw materials, energy, and process material to a minimum. These challenges can only be met successfully if the performance of all production areas is systematically increased, for example through optimized process control with SIPAPER APC (Advanced Process Control).

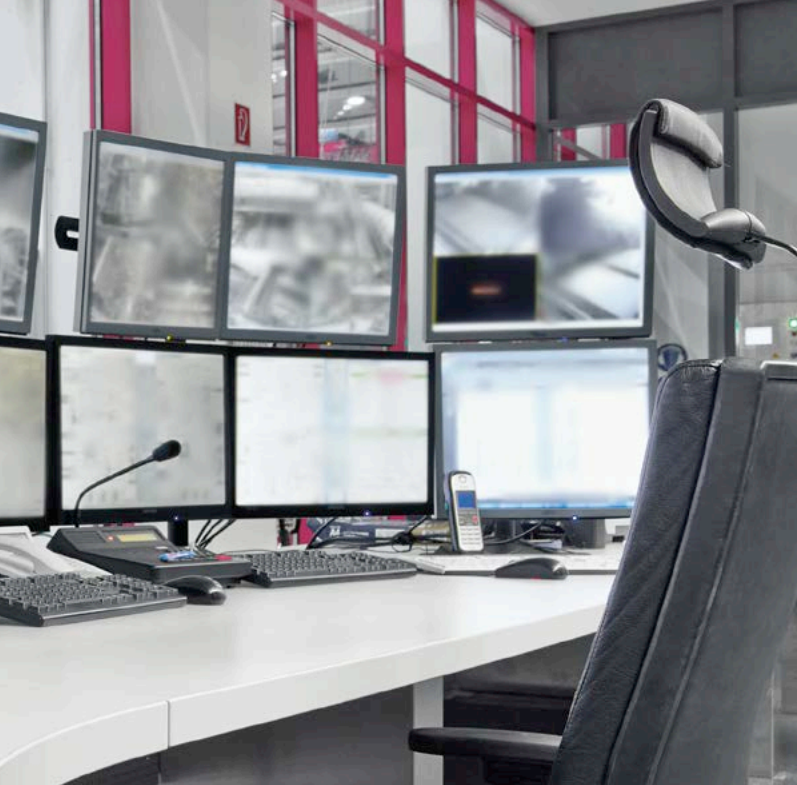
SIPAPER APC – maximizes your success

Increasing cost efficiency always means taking the individual requirements of a plant into account as well. That's why SIPAPER APC uses process models developed specifically for the paper industry, as well as libraries and modules proven in industrial applications (for example, for optimization, neural networks, robust control, etc.).

Your advantage: You work with an integrated software solution for the model-based open- and closed-loop control of your processes, which is individually adapted to your plant conditions. This uses software that can be easily connected to all existing process control systems. There are also two detailed solutions – SIPAPER APC DrySec and SIPAPER APC Bleach – which enable you to increase the cost efficiency and environmental compatibility of your production.

Your advantages

- Process optimization through cost-optimized operating points of all units
- Increased quality and homogenization of the fibrous material
- Lasting improvement of the process and higher environmental compatibility
- Proven components, optimum availability
- Global service from a single source of supply over the entire lifecycle



SIPAPER APC DrySec

Reduce your energy consumption where it is at its highest, namely in steam generation for paper drying. SIPAPER APC DrySec reduces your steam consumption and at the same time enables you to run the dryer section in energy-saving mode. The software for this operates with calculated, optimized set points for the variables that are relevant to the drying process and compares these with the process that is running.

In practice, this means fresh steam savings of more than three percent. SIPAPER APC DrySec can of course also be connected to third-party systems and can be used as a soft sensor to compute process variables for which there is no instrumentation installed.

Your advantages:

- Optimal use of energy
- Small investment with big benefit
- Constant optimal drying for consistent quality

SIPAPER APC Bleach

A dilemma for manufacturers is how to produce high-quality products with a high level of whiteness under favorable conditions, even if the quality of the raw material fluctuates. The answer is a well thought-out combination of intelligently designed control technology and optimized process management in material processing. This is precisely the area on which SIPAPER APC Bleach focuses.

The software maps the complex interrelations between processes and ensures better control of whiteness during bleaching. If different raw material qualities are used, the module uses model-predictive control (MPC) to achieve the targeted brightness and so guarantees the required quality of the bleached fibrous material. SIPAPER APC Bleach optimizes consumption of chemicals and reduces costs.

Your advantages:

- Cost-optimized dosage of chemicals
- Homogenization of the fibrous material for better quality
- The targeted brightness is achieved without manual adjustment



“Intelligent Power Distribution Gives Us the Performance We Require. Thanks to SIPAPER.”

Particularly in the paper industry, the electrical power supply requirements are especially complex. During peak loads, it is not unusual to have to distribute electricity in the hundred megawatt hour range to different consumer units safely, reliably, and economically – and within an extremely short period of time. SIPAPER Power is designed with this in mind – already during the configuration and planning of your factory system – in order to meet these requirements safely and reliably, while at the same time providing you with the necessary headroom for further developments.

SIPAPER Power – a comprehensive solution for power distribution

SIPAPER Power performs everything – from controlling of the supply and distribution to the open- and closed-loop control of all your loads. It is a fully integrated power distribution and management system for planning and monitoring the power supply for the complete process chain of your paper factory. This also includes the power supply for black starts and emergency power operation.

SIPAPER Power stands for high availability, adequate supply capacity, expandability, and scalability, based on high environmental compatibility. It goes without saying that it is also economical, saves resources, and is easy to operate.

Automation from specialists

Transparency is the key to success, and that applies to your electrical power supply distribution system as well. That's why SIPAPER Power uses an ingenious power control technology, to give you an overview of all processes of your electrical installations at all times. The system monitors the switching processes of the entire factory with smart SIMOCODE and SIPROTEC control and switch devices.



It can, for instance, detect load requirements and distribution quickly, and can reliably avoid unacceptably high load peaks. You are not linked to the central control room for this thereby, since the completely integrated SIPAPER communications network allows smooth data exchange across all supply levels. This gives you access to all relevant information at all times, exactly where you need it, including at the field level.

Cost-optimized planning

The starting characteristics of large units, the short-circuit characteristics of individual components, and the calculation of short-circuit currents and power – we take all these parameters into account in the design of the network. The optimal design of your switchgear and protection devices is then based on realistic network simulations. You benefit at every planning stage from our advanced, high-performance technologies and flexibly deployable components, which we can configure with reduced engineering input.

Your advantages:

- High availability and supply capacity that matches demand
- Central open- and closed-loop control of the entire power supply
- Transparency through monitoring and control of energy flows
- Smart components and easy operation
- Simple integration in the automation system
- Scalability and viability in the future
- Low energy losses



“Our Production Runs Smoothly and without Incident. Thanks to SIPAPER.”

Creating optimum quality at minimum cost is a question of the latest equipment and state-of-the-art technologies. These technologies need to be self-refinancing, but this is frequently impossible because of intensifying competitive pressure. The alternative to costly new investment is to combine maintenance with economic optimization – with SIPAPER Services. In this way, SIPAPER makes a double contribution to the success of your company: through cost savings and through the long-term preservation of your plant and machinery.

SIPAPER Services – helping you to achieve success

An industrial plant is only as good as the service that maintains it. With SIPAPER Services we therefore offer you services tailored exactly to the special features of your plant and that fit your products and processes. You benefit in particular from the comprehensive offering in the Siemens Industry Services portfolio when it comes to online support, technical support, repair and spare parts service, or field service.

We can also offer you wider-reaching support, for example in the form of training courses, technical consulting and engineering support, energy and environmental services, plant maintenance and condition monitoring, or modernization and optimization services, any and all of which can be combined in individualized service contracts.



Service from A to Z

SIPAPER Services give you a crucial edge over your competitors, because your plants operate at maximum efficiency and productivity, and because, as an experienced service partner, we not only look at the specific plant but also its role in the overall structure, its energy requirements, and any environmental regulations that may be applicable.

SIPAPER Services are thus geared as much to the overall process chain of the pulp and paper industry as they are to the complete lifecycle of your paper and pulp production plants. You benefit from the comprehensive technical knowledge and product know-how as well as the industry expertise of our service specialists at every stage – from planning and development, to operation, and on to modernization. And you enjoy the advantages of higher productivity, flexibility, and efficiency with low overall costs.

Your advantages:

- Comprehensive services from a single source, available 24/7 on request
- International network of expert service specialists
- Expert advice for reinvestment decisions
- Thorough analysis and optimization of maintenance processes
- Service agreements with individual performance guarantees
- Cost savings (optimized spare parts provisioning, reduced capital lockup)
- Specialized services for all phases of the plant lifecycle

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