



# Standardized monitoring of plants

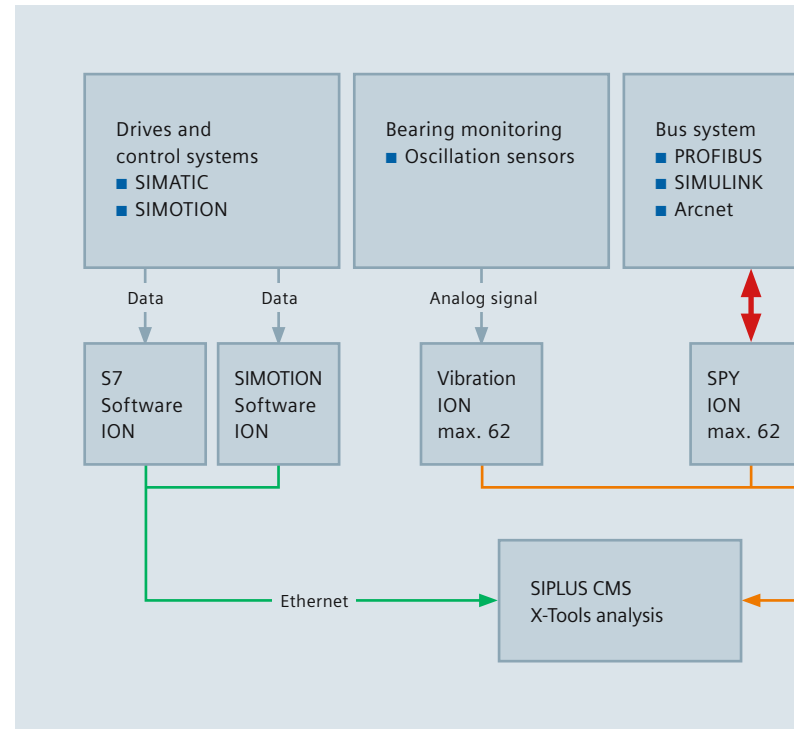
SIPAPER<sup>CIS</sup> Drives – integrated condition monitoring system (CMS)  
for the paper industry

Industrial Technologies

**SIEMENS**

# Efficient and systematic monitoring

SIPLUS CMS® is a standardized, modular and intelligent condition monitoring system offering flexible solutions for predictive filtering in process and machine monitoring, for individual drive units, and for sequential drive groups.



Acquisition of different signals in the central CMS

## The challenge

Faced with fierce competition, rising cost and investment pressure, and the need for absolute delivery reliability, paper manufacturers must find ways to continually boost their competitiveness. Given these challenges, the continuous monitoring of all processes is playing an increasingly important role.

SIPAPER<sup>CIS</sup> Drives – CMS integrates a wide range of decentralized monitoring equipment at the field level into the plant's centrally operating SIPLUS CMS platform, thereby helping to reduce costs and improve quality.

## Our solution

SIPLUS CMS features extensive modular and standardized functions for monitoring processes and machines. The system captures digital, analog and binary signals of any kind, as well as numerical data from existing bus systems or external sensors via input-output nodes (ION).

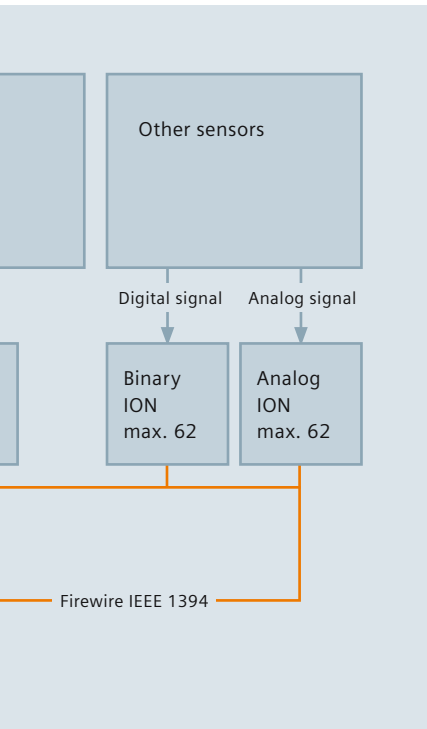
SIPLUS CMS stores and analyzes data, visualizes and reports recognized incidents back to the automation equipment via the bus systems. As a result, these incidents are also available in the process visualization at the location where they will be needed and seen – and not on a decentralized monitor.

Standardized modules also allow selective observation, analysis (for example by means of fast Fourier transformation (FFT)) and diagnosis of the detected signals. The integrated intelligence of the CMS supports the operator, which pays off particularly quickly in the case of complex functions and systems, giving the company a lasting competitive edge.

Integrated monitoring of the load state of drives in stationary operation, for example, allows recording, checking and classification of load variations with respect to their direction, size and duration with processed visualization. This can be used as the basis for a trend analysis, providing a methodical way to monitor a wide range of different quantities: The envelope curve process used is adaptive and can be matched continuously to various reference models, allowing options such as a simplified traffic light diagnosis (OK, warning and fault) to be implemented.

## SIPLUS CMS for SIPAPER

- A powerful condition monitoring system
- An integrated solution with recording, storage, evaluation, visualization and connection to the automation
- Extends process visualization up to real time (25 µs analog, 4 µs binary, 12 MBd PROFIBUS, 10 MBd Ethernet, etc.)
- Offers preconfigured modules for paper manufacturing
- Easy to operate, flexibly adaptable, can be expanded as needed



## Your advantages

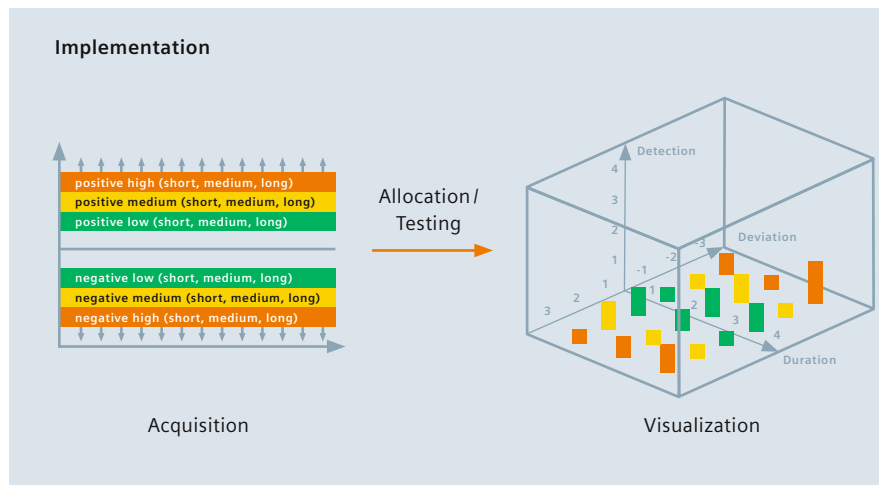
- Modular concept, compatible with other SIPAPER<sup>CIS</sup> products
- Ideal for modernization and conversion due to a high degree of scalability and expandability
- Can be configured without impacting the system
- Flexible maintenance intervals thanks to condition-based maintenance
- Planning security and increased plant availability in production by preventing unscheduled downtimes
- Fast localization of faulty components
- Simplified problem analysis for service personnel
- Selective component monitoring in the plant
- No maintenance costs for web break detection sensors
- Limiting the effect of web break incidents to individual drives
- Global service and project planning support

Another application of SIPLUS CMS in the process monitoring domain is the detection of breaks in the paper web, which are detected without the use of fault-prone sensors. To detect breaks the system instead relies on the drive data, the use of standardized SIPLUS CMS IONs, and process logic adapted specifically to the machine. As with all CMS applications, the data can also be recorded, analyzed and visualized for further processing.

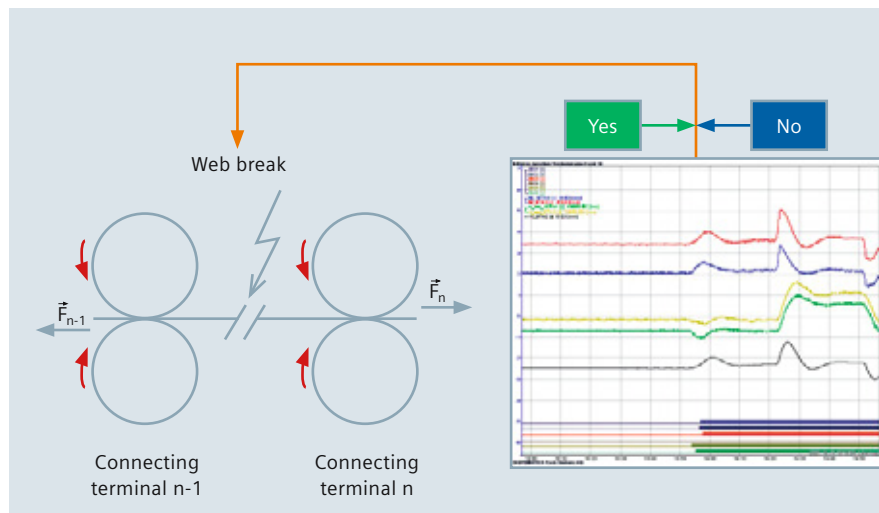
The customer enjoys maintenance-free operation and increased reliability in the detection of breaks. Or to put it simply: a better production result.

### An expert partner – today and tomorrow

In today's global market, you need an expert partner like Siemens – a partner who is more than just a product supplier, but who offers specific solutions to boost your competitiveness. A partner that goes beyond the obligatory basic service and support, and covers the entire service life of your machines and systems – from initial installation and optimization to modernization of your complete plant.



Schematic drawing of the load condition monitoring system



Sensorless web break detection in the drying group of a paper machine

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