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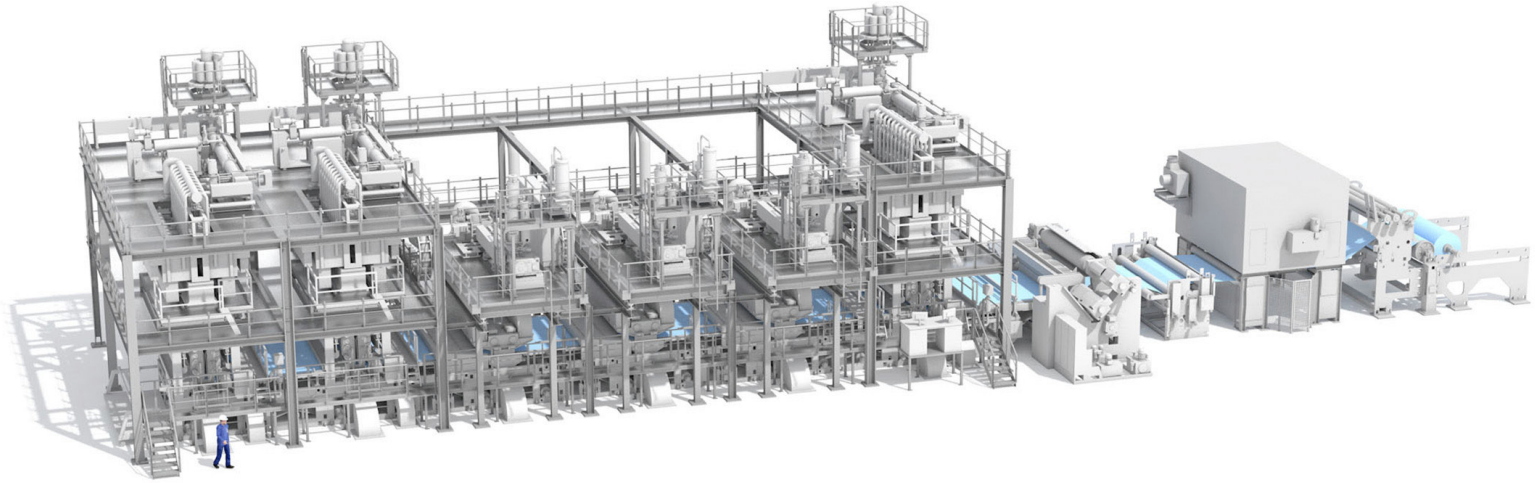

Keeping an eye on the plant at all times

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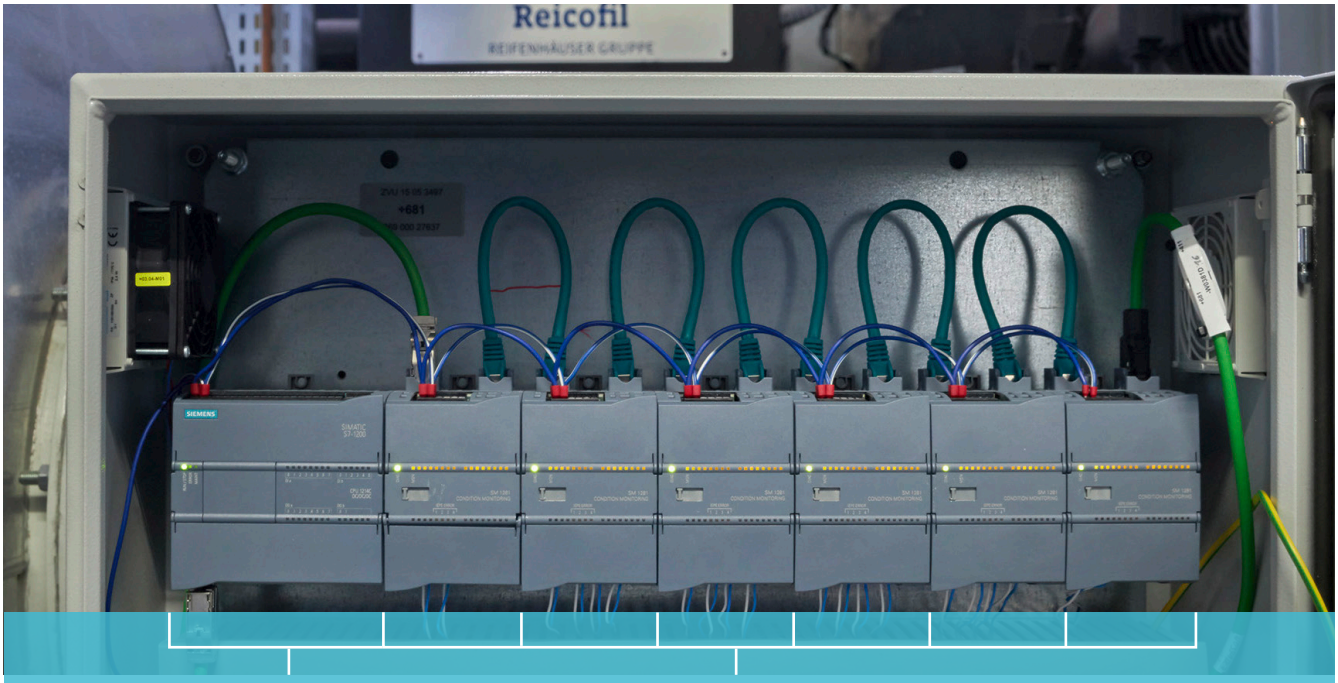
Where plant downtimes entail enormous costs, condition monitoring offers manufacturers and operators valuable insights. Reifenhäuser Reicofil has taken an important step in this direction with the condition monitoring of the Simatic S7-1200 basic controller.

Whether cosmetic tissues, tea bags, upholstered furniture, or vacuum cleaner bags, almost every area of everyday life involves nonwovens of some kind. These materials are part of many more objects than visible at first sight. Because they are used in such large quantities, the worldwide market for nonwovens is challenged to produce at ever higher throughput rates while running the machines for longer. As a manufacturer of such plants, Reifenhäuser Reicofil, decided to find the right solution for condition monitoring (CM).

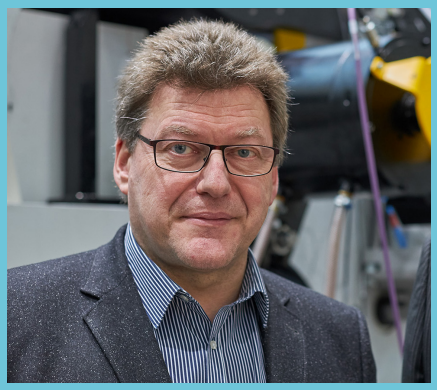
The company's control topology has traditionally been based on Simatic S7 controllers, which flexibly and efficiently perform automation tasks in the environment of nonwoven plants. This made it easy to make the decision regarding the optimal CM system: Reicofil opted for the scalable and modular Siplus CMS1200 solution. The Simatic S7-1200 CMS SM1281 module constantly monitors the condition of the mechanical components, creating the basis for predictive maintenance and an early detection of faults.



An easy-to-integrate solution

Likely the biggest advantage of condition monitoring using the CMS SM1281 module is that it is easily integrated into the overall Siemens automation environment at Reicofil: The Simatic S7-1200 basic controller can be expanded in a straightforward manner to include up to seven of these modules. Each module can then be connected to a maximum of four IEPE acceleration sensors, which pick up the vibration signals of the mechanical components. Evaluation, diagnosis, and visualization are available via web browser and do not require any additional software. The analysis results are simply sent back to the basic controller and its Simatic CPU 1214C. From here, data can be transferred directly to MindSphere, the cloud-based, open IoT operating system or, in the future, can be used to work directly in MindConnect Edge Analytics.

„We opted for the CM system because it can be so easily integrated into our existing control and automation system."



Thomas Fett,
Head of electrical design at Reicofil

Thomas Fett, head of electrical design at Reifenhäuser Reicofil, is pleased with the solution: "We opted for the CM system because it can be so easily integrated into our existing control and automation system." Up to 160 measuring points are available in nonwoven plants of the highest configuration, in which the Siplus CMS1200 condition monitoring system was used this year for the first time. These plants include bearings, gearboxes, compressors, and motors that are linked via Industrial Ethernet communication using 45 Siplus CMS1200 devices with up to 13 Simatic S7-1200 CPUs. Modularity and scalability play an important role in providing the necessary practical benefits as well as the required cost-efficiency.

With some 1,600 employees worldwide, the Reifenhäuser Group is one of the trend-setters in building systems and components for plastics extrusion. Founded in 1911, the family-owned and operated company supplies high-tech plants for blown films, cast films, smoothing films and nonwovens in every industry. The company also operates what it describes as the world's largest research and development center for plastics extrusion technology at its Troisdorf site near Cologne, Germany.

A win-win situation

Thanks to Siplus CMS1200, Reicofil is able to always keep track of the machine and accurately record its condition at all times by monitoring signals. This deep insight enables detailed knowledge regarding the design and commissioning of their own plants to be obtained, as Fett explains: "Using this information, we can perfect our designs and accurately document their proper function when commissioning new machines."

„Right from the start, Siplus CMS1200 has proven itself to be the best solution for meeting our expectations – and we always want to use the best."

Georg Breuer,
Purchasing manager at Reifenhäuser

Reicofil customers also benefit from the integrated condition monitoring and the resulting continuous condition diagnosis: Higher availability and increased production are extremely advantageous, as unplanned downtime is avoided to the greatest extent possible. Georg Breuer, purchasing manager at Reifenhäuser, emphasizes: "We want to encourage our customers to get started with condition-based maintenance." This CM system, now implemented as standard in nonwoven plants, provides the basis for this. Another advantage for Reicofil customers is that they can exactly identify where faults might occur. At the same time, they have a basis for deciding whether replacement of a bearing, gearbox, or motor can wait until the next planned shutdown. Since many spare parts are delivered just-in-time, plant operators can use such information to manage orders in a relatively precise manner.

The best solution for the objectives to be achieved

Breuer is happy with the decision for the Siemens solution: "Right from the start, Siplus CMS1200 has proven itself to be the best solution for meeting our expectations – and we always want to use the best." Thanks to its modular design, scalability, ease of use, and fast integration into Simatic S7-1200, Siplus CMS1200 can be quickly adapted to a variety of systems and equipment variants. Even in downstream plant components, and some are supplied as complete turnkey systems, the CM system has been established as a reliable option that can be easily integrated into the control environment.

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Photos: Siemens AG, unless otherwise stated

Security information
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