Reliable, interference-free web break detection

OnC WebDetect nx / LA

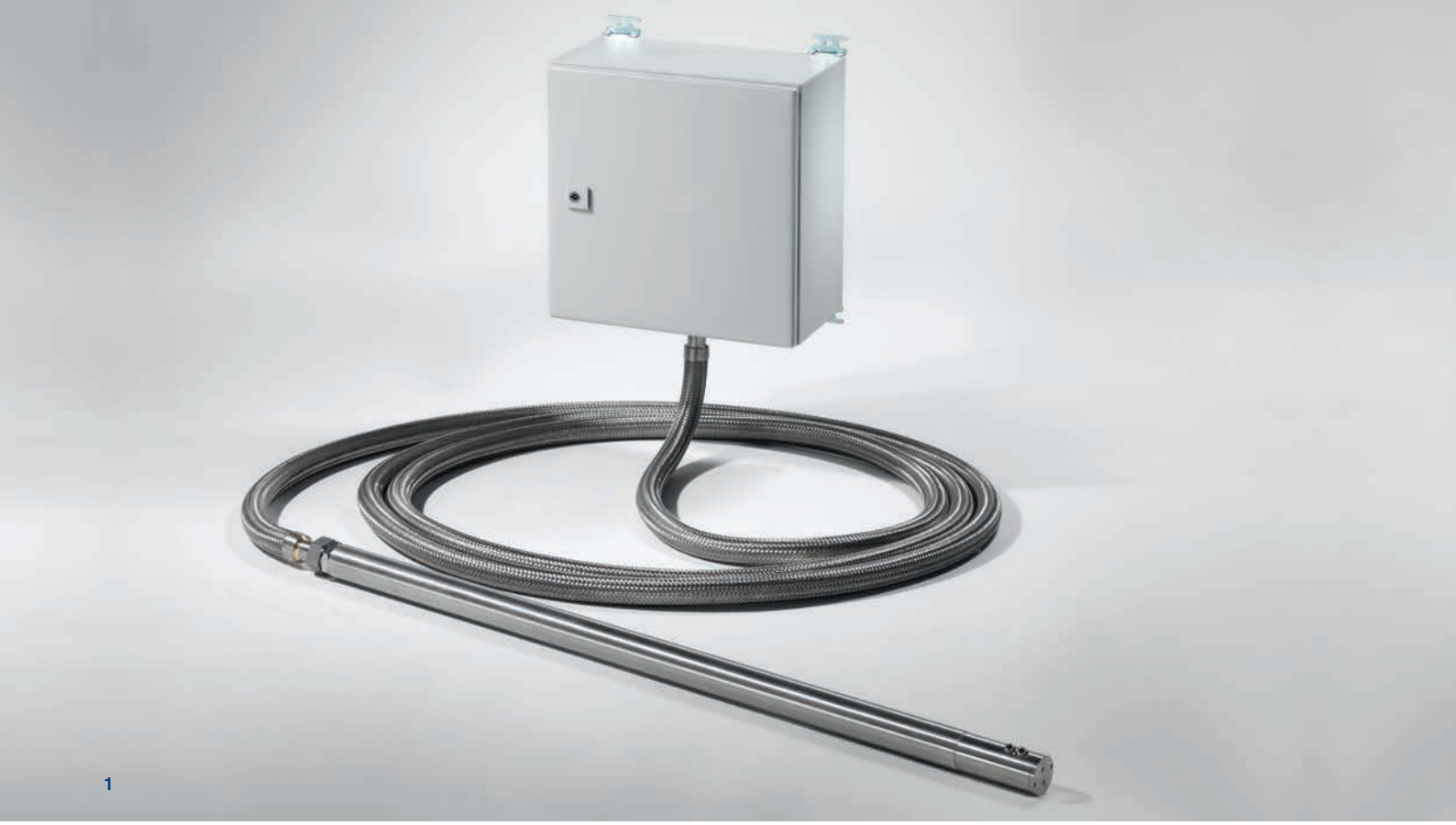
Unnecessary false alarms

Web break detectors working on the basis of infrared light or standard, commercially available sensors do not always function reliably in dryer sections. For example, problems may arise if there is insufficient color contrast between web and dryer fabric. In addition, transparent paper webs can trigger false alarms, e.g., due to low basis weights or high moisture content. The result may either be unnecessary downtimes due to false alarms or the risk of damage to the paper machine if breaks are not identified immediately.

Clear-cut detection

Based on these needs in the paper industry, Voith has developed a solution for web break detection that is more reliable than any before it: OnC WebDetect nx.

The multi-light sensor uses a total of four light sources to detect web breaks by measuring within the visible and infrared light frequency range. The measuring principle is based on a spectroscopic process that takes account of the special optical qualities of the paper web and dryer fabric / dryer cylinder. This prevents impairment of break detection due to fluctuating paper qualities like moisture and basis weight variations or as a result of clothing that is deteriorating and becoming discolored.



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The simultaneous high-speed measurements of the measuring beam at different wavelengths produce a reliable signal, and the logical analysis of several measuring channels simultaneously results in the reliable detection of faults.

In addition, OnC WebDetect nx identifies web breaks more accurately, as the measurement is processed in a microchip. As a result, outside light effects are compensated, the signal is filtered and trigger thresholds are calculated accurately and adjusted on an ongoing basis. With OnC WebDetect nx, unnecessary downtimes due to false alarms are a thing of the past.

OnC WebDetect LA for break detection on the dryer cylinder

The OnC WebDetect LA has been developed especially for board and packaging papers. This version detects breaks and is independent of the dryer fabric color.

Easy to use

Thanks to the interfaces (profinet, profibus, modbus or standard I/O module), OnC WebDetect nx can be accessed via the process control system. This means that the break sensors can be easily calibrated directly from the control room. Visualization and operation can also be done conveniently in the process control system.

The system can be operated fully automatically by integrating it into the MCS (Machine Control System) using suitable PLC (Programmable Logic Controller) function modules. Optimizations can be carried out remotely by our specialists. On start-up, the customer-specific parameters can be easily set via the website. Only the sensor measuring head has to be adjusted mechanically.

The OnC WebDetect nx diagnostics signal the need for maintenance, which optimizes the service intervals. Thanks to the improved purging air system, the sensor optics stay clean longer and therefore seldom need maintenance.

Comprehensive support

As a process vendor, Voith offers a complete package. Automation experts undertake system integration, engineering and documentation of all hardware and software components of the OnC WebDetect nx web break detector and commission the system.

1 OnC WebDetect nx – measurement on fabric or in open draw

2 OnC WebDetect LA – measurement on dryer cylinder

Benefits

+ Global remote optimization & diagnostics through integration into the MCS
+ LA version reliably detects breaks, independent of the fabric color – optional version for board and packaging plants
+ Low risk of machine damage thanks to extremely reliable web break detection
+ No unnecessary downtimes, leading to increased production by avoiding false alarms
+ Simple maintenance thanks to rugged, self-cleaning measuring head design and readily accessible assembly
+ Safe and time-saving operation from control room via process interface
+ PLC function module for fast integration

Specifications

- Control voltage: 24 VDC (at max. 0.9 A)
- Instrument air: 600 – 1 000 kPa (6 – 10 bar) filtered, oil-free
- Air consumption: 75 l / min (at 1 bar purging air)
- Compressed air hose: push-in 8 mm
- Switch box: IP65 with sealing air
- Sensor head: 150° C
- Distance sensor-electronics: 15 m

Interfaces for process integration

- Discrete analog-digital interface
- Profibus
- Modbus
- Webserver
- Profinet

Application

- Pre- and after-dryer sections on fabric, dryer cylinder or open draw
- Coaters and speedsizers in the area of the dryers

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