



VISION SENSORS

Break detection
for pulp and paper

VISION
by PINJA

RELIABLE WEB BREAK DETECTION

Web or sheet break detection on the paper machine is a critical task requiring precision and speed of detection. Precision is required because a false break indication can cause a break, speed is essential to avoid damage to press rolls, paper rolls or calenders and to reduce the clean-up time before the machine can be rethreaded. Reliable detection reduces machine stop time to improve productivity and operator safety.

The simplest method of detection is a photoelectrical cell at an open draw, a very economical solution but not foolproof, it requires access to both sides of the sheet and scraps of paper from a break can block the light transmission. Reflective infrared sensors have also been used to measure the paper in an open draw or on a roll, but can have difficulties when the sheet is backed by a felt fabric; the reflective difference between paper and felt can be quite small and the all too important precision is lost.

Precision break detection

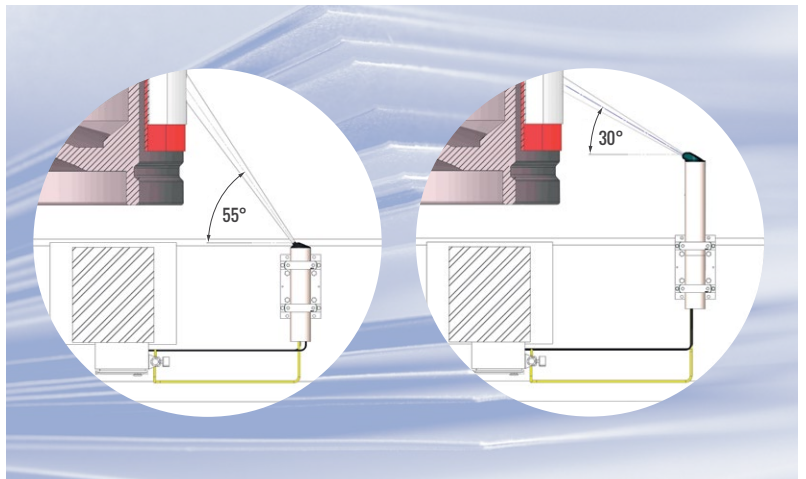
The Vision by Pinja VISI 110 utilizes a color sensor and high intensity LED with optics, which are used to detect the web break in the shortest time. The color detection limits can be set for a variety of paper grades and fabric colors to eliminate false break signals and sensors can be located where needed to provide the fastest response to a break.



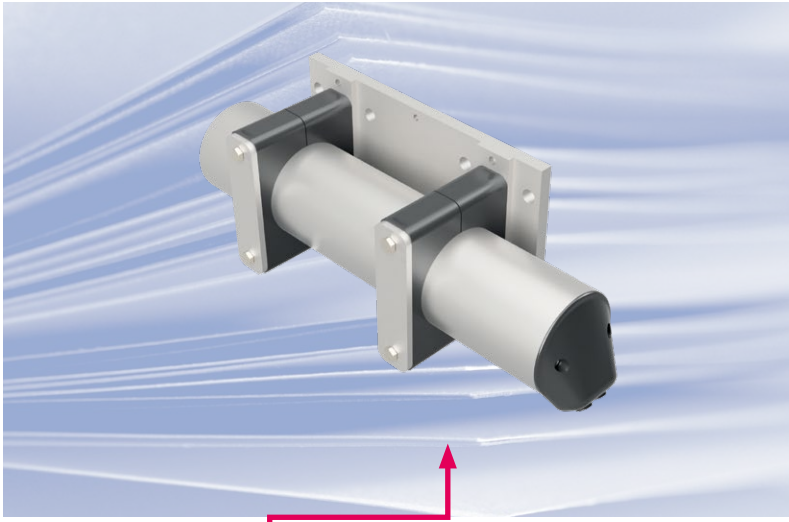
The different colors of the fabric and web provide an accurate indication of a break and reliably avoid false indications.

Optimum optical design

Unlike other available color based break detection systems, VISI 110 does not use fiber optics which can limit light output or reduce detection sensitivity. This allows the use of optimally designed optical lenses which, together with the choice of two detection angles, provides an extended sensing distance. The sensor can even be located outside the web path, on the machine frame for instance, removing the possibility of mechanical damage from a web break or interfering with tending side threading ropes.



Choice of optimum detection angle allows sensor mounting outside the web path.



Remote diagnostics and minimum maintenance

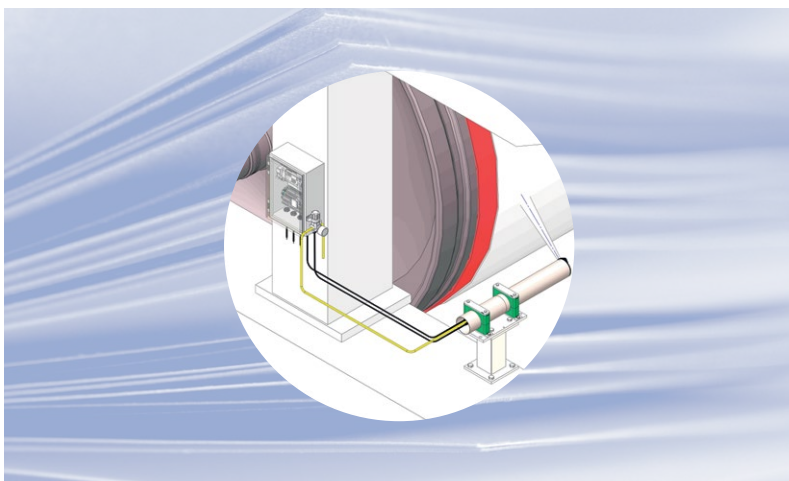
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Easy commissioning

Calibration can be performed locally at the field cabinet or remotely via the Ethernet communication interface. Requires only the push of a button with the web off and then on. Break and web on window limits, as well as response times to break and web on, are all individually adjustable. With internal data logging and browser interface, precise break time data and confirmation of sensor operation provides a degree confidence that operators can rely on.

Extended detection distance decreases risk of mechanical sensor damage.



From press to reel

VISI 110 has been specially designed for extreme conditions and space limited locations for use at any position in paper, board or pulp machines. The same web break detector can be used on open draws, rolls and felt backed webs, all the way from the wet end to the reel, both reducing spare part needs and simplifying maintenance.

Simple installation for use at any position in paper, board or pulp machines.

PINJA

Pinja is your partner in digitalization and industrial innovation. We are a guide to business development throughout its lifecycle from consulting to design, implementation to maintenance and the development of entirely new digital business models.

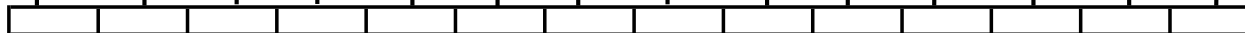
We create leading digital solutions for the streamlining of work and for supporting top performances in demanding industrial and production environments. With our digital solutions, you can improve supply chain management, shop floor management, maintenance, operational reliability, occupational safety, and data-driven management. Our software development service allows you to create new digital practices and businesses.

We are a responsible and reliable partner throughout the lifecycle of your business. By improving the efficiency of our customers operations, we are helping them develop sustainable business practices in a world that needs responsible solutions now more than ever.

Pinja employs some 500 people in Finland, serving leading Finnish industrial and business clients and international organizations in more than 30 countries.

SELECTION CHART

VISI110		Web break detector	
Version		M1	
Output		C 4-20mA (3 x DO 0/24 Vdc 150 mA Common ground)	
Sensor head optical angle		1 30° 2 55°	
Sensor type		0 Integrated sensor	
Light source		1 White LED	
Cable temperature rating		H High temperature 120°C	
Cable length		1 25 meters	
Device enclosure		0 None S VISIBOX-μ (Power Supply 24V DC 1A) A VISIBOX-μ (Power Supply 90 - 264 VAC, 50/60 Hz)	
Cooling option		0 None 1 Vortex cooling 2 Vortex mounting parts, no Vortex cooler	
Software version		SW1 SW1.0	
Protective tube length		0 None 40 400 mm 60 600 mm 80 800 mm	
Mounting parts		0 None 1 Standard mounting parts	
Options		0 None	



Example selection VISI110 - M1 - C - 1 - 0 - 1 - H - 1 - S - 1 - SW1 - 40 - 1 - 0