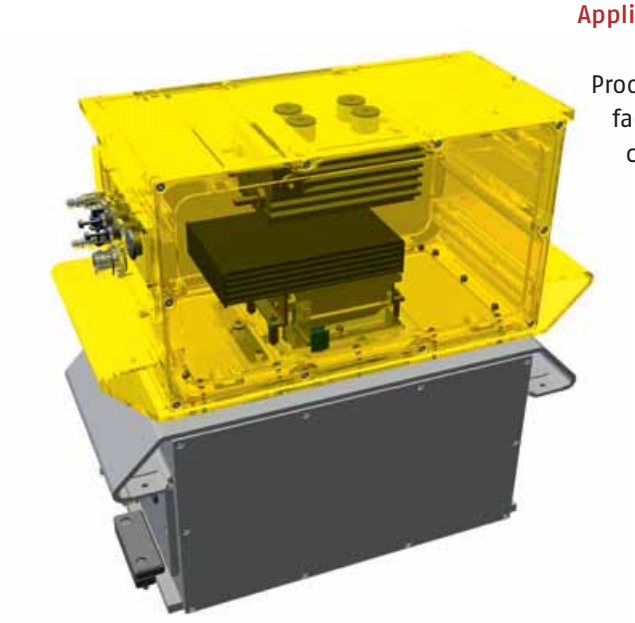
SENSORS

AQUALOT HMF

MOISTURE MEASUREMENT

TEXTILE NONWOVENS PAPER PLASTIC



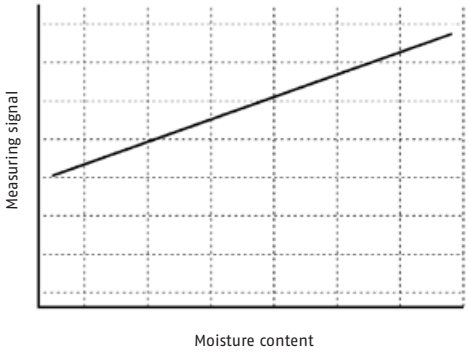
Sensor model DS-115

Applications

Product moisture is an extremely important parameter for the manufacturer and processor of web products such as paper, textiles, cardboard and nonwovens. Microwave-absorption technology has been used for quite some time to determine this quantity online, but up to now, limited resolution has restricted its use to measurement of larger quantities of water, thus preventing it from being used to measure thinner products or lower levels of moisture. With this patented measuring technique it is possible to detect even the smallest amounts of water exceedingly accurately and with a high degree of stability, thereby enabling it to be used on even thin printing paper, airbag materials or the nonwovens used in the hygiene sector, without its accuracy being affected by product colour or composition.

Product-highlights

- ✓ Highly accurate and stable measurement thanks to microwave-resonance analysis
- ✓ Unaffected by the color of the product web or its chemical composition
- ✓ Temperature compensation by using a pyrometer to detect product temperature
- ✓ Servo-motor controlled tracking of the lower resonance chamber in traversing mode (sensor model DS-115)



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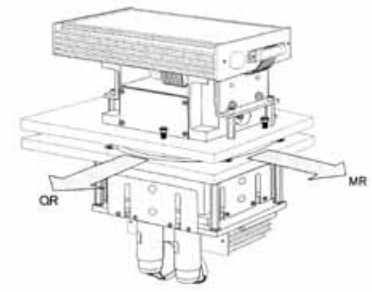
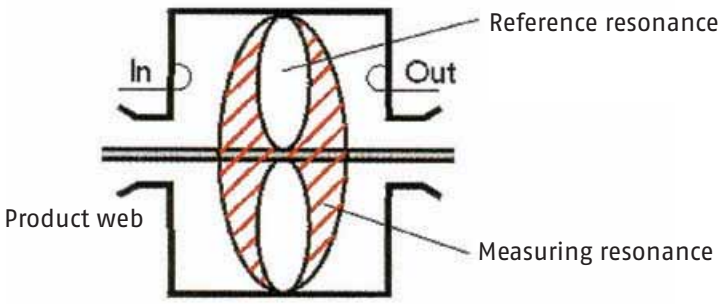


Automatic scanner centring

Principle of operation

The sensor consists of two parts, which together form a resonance chamber, and the product passes through the centre of this divided chamber. A microwave emitter stimulates two standing waves in the resonance chamber, whereby one of the two corresponds to the absorption wavelength of the water molecules in the microwave spectrum and the second serves as a reference. Contrary to the traditional absorption technique, the Aqualot HMF device evaluates the shift in the resonant frequency of the two standing waves with respect to each other rather than the attenuation of the microwaves by the quantity of water molecules in the measuring gap. This patented "microwave resonance" principle is virtually insensitive to changes in product composition, an advantage that helps keep the number of product-specific calibrations to a minimum. In addition, the device is characterised by its ability to resolve to an exceedingly high degree even the lowest percentages of moisture, thereby extending the use of microwave technology significantly in comparison with traditional measuring techniques.



Principle of measurement

Customer benefits

- ✓ Non-destructive, continuous determination of the amount of moisture (H_2O) in product webs
- ✓ Extremely accurate and stable measurements; calibration reduced to a minimum
- ✓ Long life expectancy through the use of high-quality components
- ✓ Wide measuring range through the use of various resonance configurations

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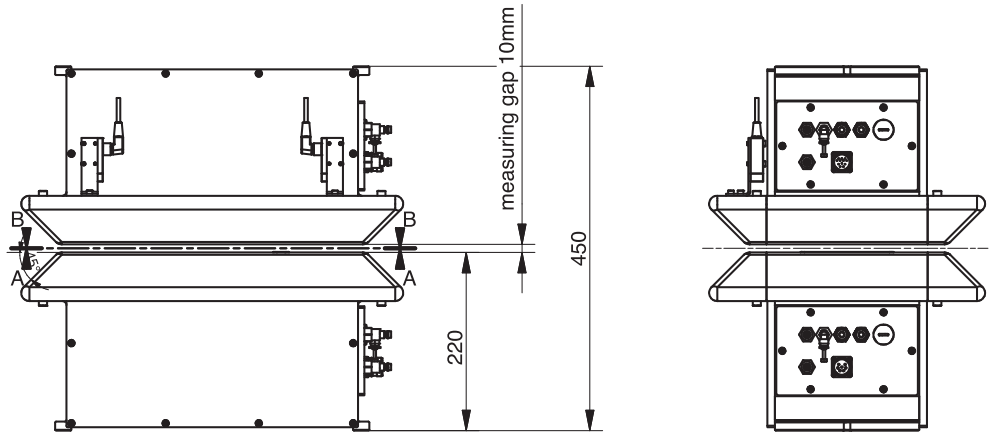
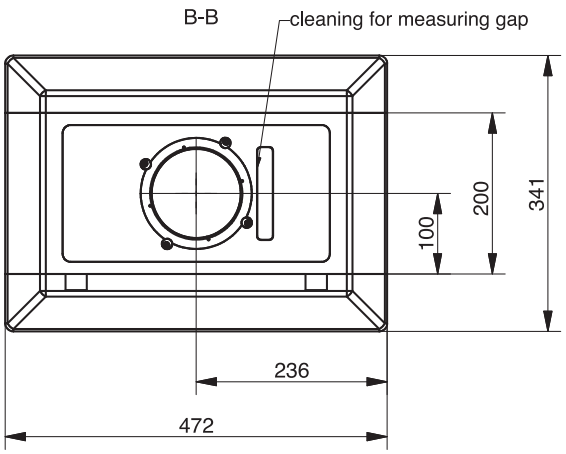
Sensor	Aqualot HMF			
Measurement Principle	Microwave resonance			
Model	DS-115			DS-20
Measurement range	1	2	3	
Water weight	1 – 25 g/m²	1 – 50 g/m²	1 – 100 g/m²	1 – 600 g/m²
Resolution	± 0.01 g/m²	± 0.02 g/m²	± 0.04 g/m²	± 0.1 g/m²
Measurement Gap	10 mm			13 – 23 mm
Power supply	24 V DC			
Operation limits	Max. 70° C (or higher with water cooling)			

Dimensions





AQUALOT HMF sensor
(model DS-115)
91-015272

GRAVIMAT FMX / AQUALOT HMF