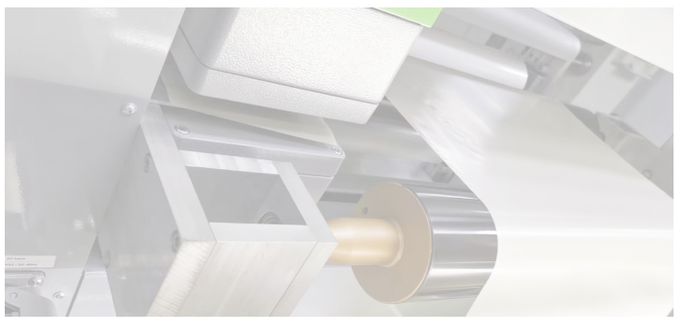
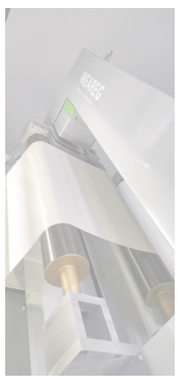
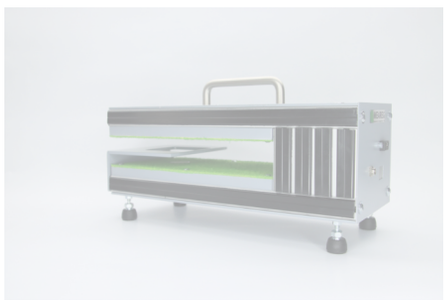






MEAREG

measure & regulate

MEAREG
measure & regulate

- Research and development from Germany
- Own production in Germany
- Worldwide service and support
- competent, well-known cooperation partners
- Continuous development of our products

meareg, founded in 2020 in Dießen am Ammersee, develops, produces and sells measuring and control systems for a wide range of industries in the field of flat web production, such as:
Coating, Foil, Extrusion, Paper and many more.

With over 15 years of experience in the development, manufacture and support of measuring devices, **meareg** succeeds in developing and manufacturing easy-to-use measuring devices that meet customer requirements.

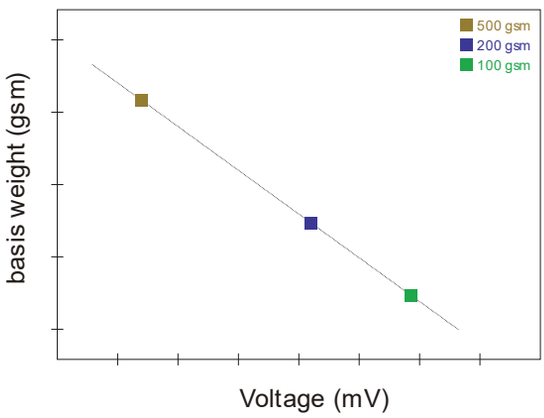
meareg offers excellent worldwide support for a wide range of measurement products, as well as professional advice on production problems and the optimization of existing systems.

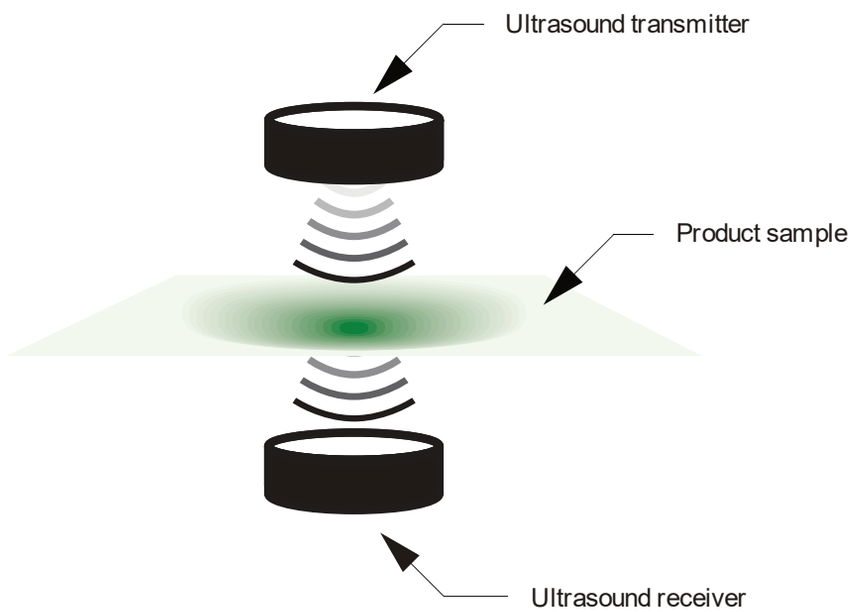
MADE IN GERMANY

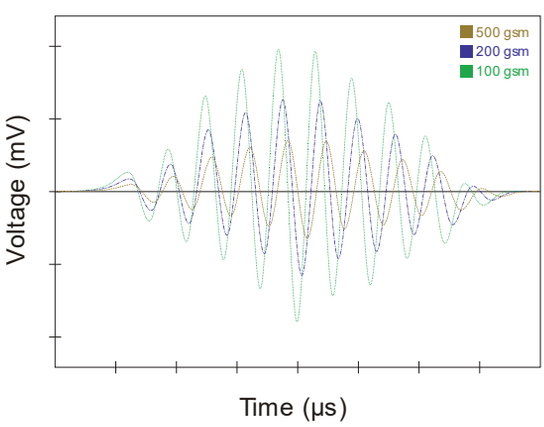
MEAREG Ultrasonic basis weight measurement

meareg's ultrasonic sensor technology, **meaSONIC®**, offers enormous cost savings compared to beta or gamma radiometry or X-rays (x-ray).

The **meaSONIC®** sensor is based on the ultrasonic absorption measurement method.
The built-in processor calculates the basis weight in real time regardless of material, color and position and is suitable for paper, metals, plastics, coated fabrics and much more.







A sound source generates a defined sound impulse that propagates through an excitable surface (flat web). **meareg** has developed a method that determines this sound propagation.
Depending on the basis weight of the product, the recorded sound impulse propagates proportionally weaker or stronger.

www.meareg.de
meareg UG
info@meareg.de

MEAREG Ultrasonic basis weight measurement

The **meaSONIC®** sensor is able to output real-time measurement results without prior notification (calibration) of the product. This is due to the linear relationship for basis weights of up to 1200 g/m².

meaSONIC® automatically adapts to changing environmental conditions such as temperature, humidity, air pressure and air movement.

The **meaSONIC®** sensors work exclusively with ultrasound and do not emit any radiation, in comparison to beta radiometry or high-energy X-ray devices. These systems typically require expensive licenses and permits, as well as built-in radiation shielding and specialized radiation training for operators.

Beta and gamma rays are generated from radioactive materials that require costly and environmentally harmful disposal.

Specs **meaSONIC®**

Measurement range:	0 – 1200g/m²
Measurement speed:	Max. 200Hz
Measurement spot:	90% within 5mm, 100% within 25mm
Transducer diameter:	25mm
Measurement noise:	0.05%** of the measured value
Temperature:	0.1% / °C
Power requirement:	meaSCAN: 220VAC/0.5A meaSONIC: 24VDC/0.1A

*down to 1 g/m² - accuracy if less than 20g/m² better 0.1%
**stable environmental conditions provided

Comparison meaSONIC - others

Optical measurement methods are usually unsuitable for very thin films due to spectral problems. Capacitive, X-ray and infrared measurement methods are very sensitive to material properties and the environment.

	Radiometry or X-Ray	**meaSONIC®**
Measuring procedure	Absorption measurement - dependent on material property no coating measurement	Measurement of weight, independent of material, color, layers, suitable for paper, metals and other conductive materials, plastic, etc.
Contact	none	none
Accuracy	Accuracy decreases with decreasing material thickness. Problem with very thin films.	< 0.3% of the measured value, resolution 0.02. Very high accuracy with low product thickness. Decreasing thickness has no effect on the accuracy of the measurement!*
Error pass line	High influence	< ±5 mm no effect
Measuring frequency	Low, integration of noise	High, 5ms or 200Hz (max.)
Calibration and adjustment	Material dependent	Material independent
Measuring window	Small measuring gap	Large measuring gap (>35mm)
Maintenance, service:	Radiation protection, authorized operators, difficult repair, radiation source half-life, complex technology, follow-up costs due to the disposal of radioactive sources, as well as costs for radiation protection officers and from continuous radiation protection tests.	Simple and modern sensor technology, no disposal of radioactive waste, very low-cost maintenance.
Biggest differences are:	Radiation hazard! High capital and operating expenditure Large field of view, small field of view is only possible with lens apertures, which in turn requires a higher intensity of radiation	Long lifetime, easy to clean, rugged and robust sensor. Very small field of view (small measurement spot) Laboratory unit with passage device for samples available. Sensor with a MEAREG unique modern design. Interfaces are: RS232, Ethernet, USB, also for re-fitting for old radiometry plants suitable!

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