

Sen4BS/Sen5BS

Weight Measurement

X-ray Backscatter

for Plastic, Paper, Metal, Textile, Coating, Non-Woven, etc.

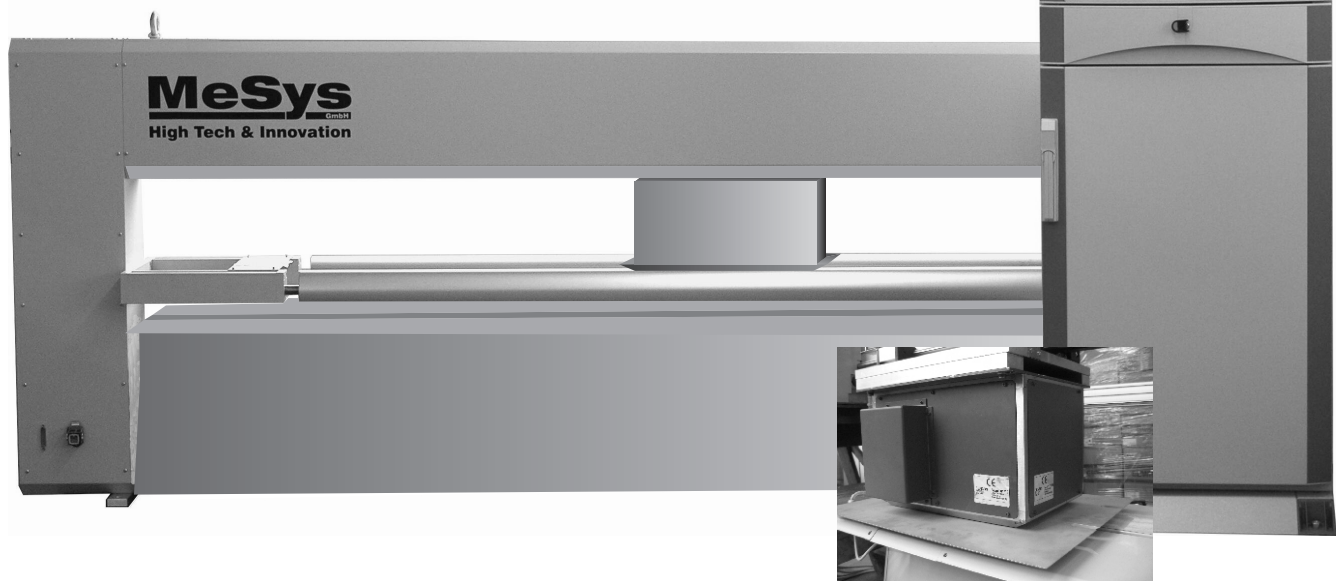
2 versions available

- ◆ SEN4BS 60kV Version for materials up to 20000gsm
- ◆ SEN5BS 20kV version for materials up to 4000gsm - no radio protection -

New!

Non-Contact

Non-Radioactive



Measurement Principle:

The backscatter technique is widely used in the measurement of lack on Al and Fe with beta rays and in the measurement of blown film thickness on bubble with gamma rays. The utilisation of X-rays was not up to now possible for the limited stability of tubes and related electronics. Things have now changed!

Some theoretical consideration: any radiation is subjected to a backscatter when falling on a surface. The quantity of backscattered radiation is a few percentage (R) of the total and it is increasing with atomic number Z in case of beta rays. It is on the contrary decreasing with Z in case of X-rays. F.i. R is going from 0.2 to 1,8 from C to Pb with a beta radioisotope.

The chance to measure is bounded to the ratio $K = R1/Ro$, where R1 is the R of the coating and Ro is the R of the base. To have an efficient measure K has to be $< 0,8$ or $> 1,2$

The curve is always exponential. It is decreasing when $K < 1$. It is increasing when $K > 1$.

Of course the base can be the air! In this case you have the standard thickness measurement.

Sen4BS/Sen5BS

X-ray Measurement

- ◆ Very good repeatability and accuracy down to $\pm 0,1$ gr/sm.
- ◆ Measuring range from few microns to many millimeters.
- ◆ Insensitive to chemical composition.
- ◆ Single sided measurement
- ◆ No or limited cost of radio permission
- ◆ Broad applications measurement capability
- ◆ Material mixture measurement



Possible Application

Plastics

Blown film lines, cast lines, converting, packaging, non woven, wall paper, artificial leather, sheets and boards lines

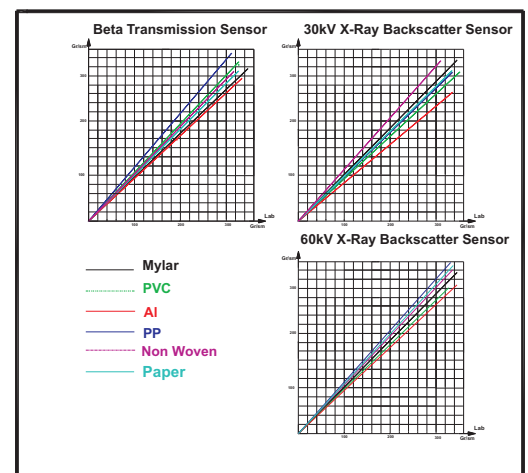
Metals

Cutting and laminating lines for Steel, Cr, Zn, Pb, Al, Cu aso

Paper

Paper, coated paper, corrugated paper, converting

Various Glas, glas wool, mineral wool panel, fibreboard, insulating and sound absorbing panels, tissues and cloths. **All types of textiles**



TECHNICAL DATA

Type of measurement	x-ray backscattering, single sided
Beam power	20kV or 60 kV according to application
Measurement gap	15 mm
Repeatability(2s ; 5sec) with 7 m film:	Short term $\pm 0,12$ microns longterm(no standardisation) $\pm 0,2$ microns
Pass-line variation	0,1% / mm
Standard Spot dim.	18x17 mm
Power supply:	24Vdc ; max. 10A ; 240 W
Dimensions	280x280x449 mm / 23 kg or 267x259x320 mm / 15kg;
Output:	1 Ethernet cable with linearized measurement; nr. 1 measurement analog linearized 4-20 mA output
Temperature	Up to 45 C° with internal heat pump thermoregulation Up to 70 C° with additional heat pump thermoregulation