



IONIZATION CHAMBER ARRAY

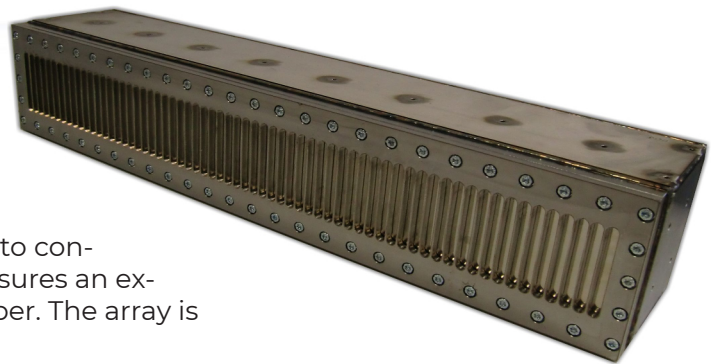
Ionization Chamber Array for Industrial Applications

Our Ionization Chamber Arrays are mainly used for radiometric thickness, basis weight and density measurements in fixed (non-traversing) measuring systems. They serve as sensors for the radiation transmission measurement process.

Characterized by their segmented design (linear arrangement of ionization chamber cells), stability and long service life, they are suitable to be used in the field of sophisticated industrial applications e.g. battery electrode foil production.

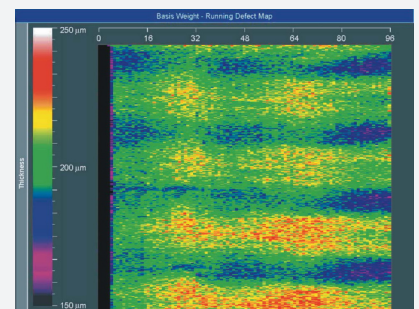
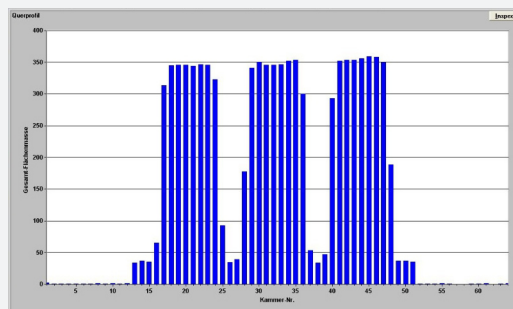
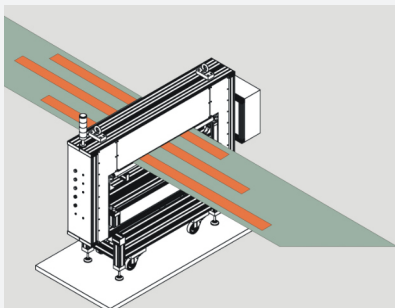
The chambers are temperature stable and, with their time constants of just a few milliseconds, are ideally suited for fast measuring processes.

As radiation entrance windows we use foils made of steel. High precision welding and latest adhesive technologies are used to connect steel foils with steel housings. This ensures an excellent vacuum tightness of the ion chamber. The array is filled with high purity xenon gas.



Principle of Measurement - 100% Process Control

Using Ionization Chamber Arrays allow measurements of the profile of web materials without traversing technologies. Hence the acquisition of the radiometric measuring data of the complete web width happens instantaneously.



Above illustration shows the principle of the instantaneous measurement of the cross profile of a stripe coated foil (left and middle picture) and a mapping of an inhomogeneous web material (right picture). The availability of measuring data of the entire material enables 100% traceability of the whole production process.

Accessories

High Voltage Supply (circuit board)

The High voltage supply provides operation voltage of up to -1000 V for the Ionization Chamber Array. The electronic board provides terminal clamps and one contact to monitor the high voltage.

Voltage Supply (circuit board)

A stable +15/-15 V output is provided by the Voltage Supply board to power the 8-Channel Amplifier. One Voltage Supply can be used to power 8 amplifiers. An adapter (REF 931 00 13) to mount the board to a top hat rail can be provided for the High Voltage- and Voltage Supply board.

8-Channel Amplifier (circuit board)

The amplifier converts tiny ionization currents into processible voltage signals. Amplified measuring signals are provided by a 16 pin fixed board connector. 8 pieces of the amplifier are needed for a 64 cell Ionization Chamber Array. All electrical feedthroughs of the array need to be connected to the corresponding amplifier input pins by soldering technique.

Shielding Module

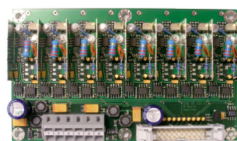
The special Shielding Module is a lead filled stainless steel housing that incorporates a radiation line source (to be ordered separately) in its center. It is intended to be used with Ionization Chamber Array REF 207 00 06. The module opens a radiation shutter during operation and closes the shutter (storage state) if the measurement is stopped or finished in order to enable radiation protection standards.

The radiation source is a gas filled tube (commonly Kr-85, 18.5 GBq (500 mCi)) that emits beta and gamma radiation. Compatible sources can be ordered directly from a radiation source provider referenced by VacuTec.

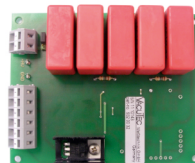
Component	REF No.	Supply voltage (V DC)	Filling		Window			Dimensions		Operating temperature range (°C)	
			Gas	Pressure abs. (bar)	Material	Thickness (µm)	Number of cells	Cell dimension (mm)	L x W x H (mm)		Weight (kg)
Ionization Chamber Arrays	207 00 06	-600	Xenon	1.95	steel	15	64	62 x 6.5	510 x 122 x 102	15	15 ... 60
	230 00 04	-1000	Xenon	5	steel	200	32	22 x 21	722 x 170 x 90	35	15 ... 60
	230 00 05	-1000	Xenon	3	steel	50	32	22 x 21	722 x 170 x 90	35	15 ... 60
			Output voltage (V DC)		Features						
High Voltage Supply	932 00 32	+18 ... 36	-450 ... -1000		Voltage adjustable			100 x 80 x 30	0,110	5 ... 55	
Voltage Supply	932 00 23	+18 ... 36	+15 / -15		Integrated temperature and humidity sensor			100 x 80 x 45	0,135	5 ... 55	
8-Channel Amplifier	932 00 14	+15 / -15	0 ... +10		Current-voltage conversion			120 x 70 x 30	0,085	5 ... 55	
			Pneumatic supply								
Shielding Module <small>(for use with REF 207 00 06)</small>	240 00 30	6 bar filtered air		Operation- and storage state are controlled by inductive reed contacts			905 x 127 x 125	85	10 ... 55		



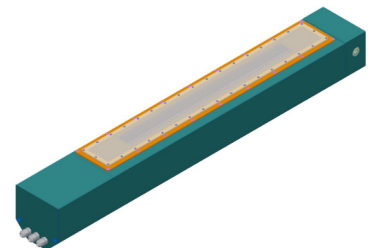
High Voltage Supply



8-Channel Amplifier



Voltage Supply



Shielding Module