

**METAL SHARK® COMBI**  
Flat metal detector  
for textile and non-woven products

Metal sensitivity from Fe 0,3 mm

**METAL SHARK® - The new generation in metal detecting technology**

Introducing the METAL SHARK® presenting a completely new design in high sensitivity metal detectors. The METAL SHARK® control unit provides outstanding sensitivity, accuracy, stability and precision product-effect compensation.

The METAL SHARK® features the latest four channel DDS (direct digital synthesizer) and DSP (digital signal processor) technology. These technologies provide outstanding product-effect compensation. High processing speed, DDS and DSP makes the METAL SHARK® the leader in digital metal detection.

Digital balance control - levels temperature and humidity influences.

Auto calibration - fast and easy set-up.

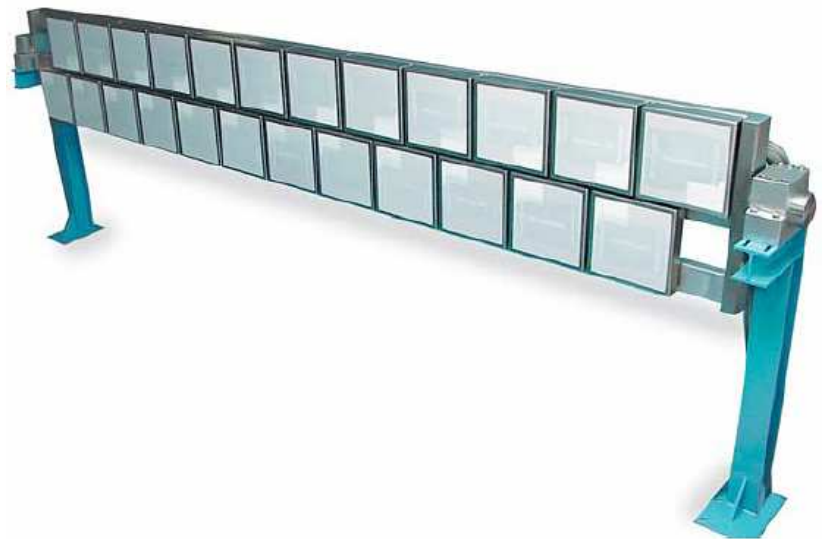
Digital frequency & phase control avoid any drifts. Once calibrated keeps the set-up forever. No need for re-calibration.

Digital noise filters eliminate undesirable signals such as vibrations and shocks.

Multi-channel technology for the optimum recognition of all metals; ferrous, nonferrous and stainless.

Power supply: Wide input 85-265 V AC works great even with unstable and poor power sources.

Auto self-control - possible functional defects of the device are displayed on a separate output contact.



**METAL SHARK® COMBI**

Typically, the METAL SHARK COMBI is used for inspection of textile-widths to detect smallest magnetic and non-magnetic metal particles.

The metal detector is constructed as a multi-segment-sensor. The total detection zone of the detector is thus divided into several single zones, each of them being about 300 mm wide. This makes it possible to assign detected metal particles to a definite area of the textile width.

Due to extremely high sensitivities of the single segments, minute particles of metal are detected over the whole width. Diameter of smallest observable metal-balls: about 0,3 - 0,6 mm (depending on distance to the sensor)

**Industrial design**

Maintenance free design and high quality construction, for reliable operation in the most challenging industrial environments.



Unit 9 18812 96<sup>th</sup> Ave., Surrey BC Canada V4N 3R1  
Phone: +1(604)607-6028 Fax: +1(604)607-6026  
[www.metal-shark.com](http://www.metal-shark.com) [sales@metalshark.com](mailto:sales@metalshark.com)

## METAL SHARK® COMBI - Control unit

### Easy handling

In practical use, settings of metal detectors often need to be checked quickly and reliably during production. Cassel attached great importance to user friendliness: The software is self-explanatory: An interface-manager leads the user step by step through the menus that have to be adjusted. E.g. product teach is done with one-button-push.

### Intuitive operation

The display shows only the information that is really required. Reduction to the essential makes operation clear and transparent.

### Product library

The characteristics of 120 different products are stored and recalled here.

### Auto calibration

Provides simple and quick learning of product characteristics for product effect compensation. Pre-set product properties for DRY, WET, FROZEN, ALU-FILM, VIBRATION and SHOCK makes new product setting exceptionally easy and reliable.

### Maintenance-free - Save your service budget

Maintenance-free - the METAL SHARK® digitalized circuitry ensures many years of reliable performance. The electronics are 100% computer calibrated with every power on. A frequent calibration service is not required. The METAL SHARK® saves your service budget. All electronic circuits are miniaturized thanks to the latest state-of-the-art SMD-technology. . All components are mounted on one multilayered board providing advantages in noise immunity and reliability Just in case – board replacement can be done by most electricians.

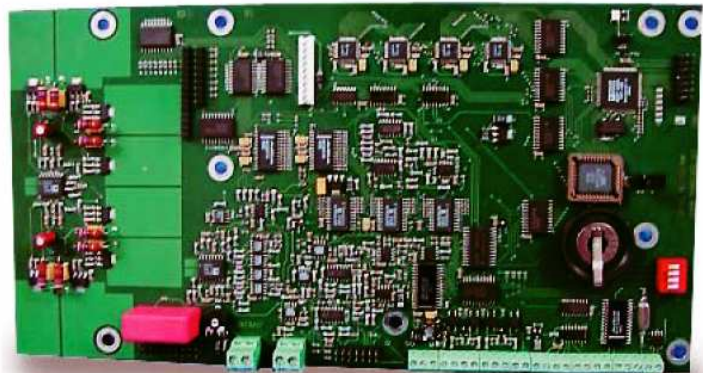
Control unit MASTER

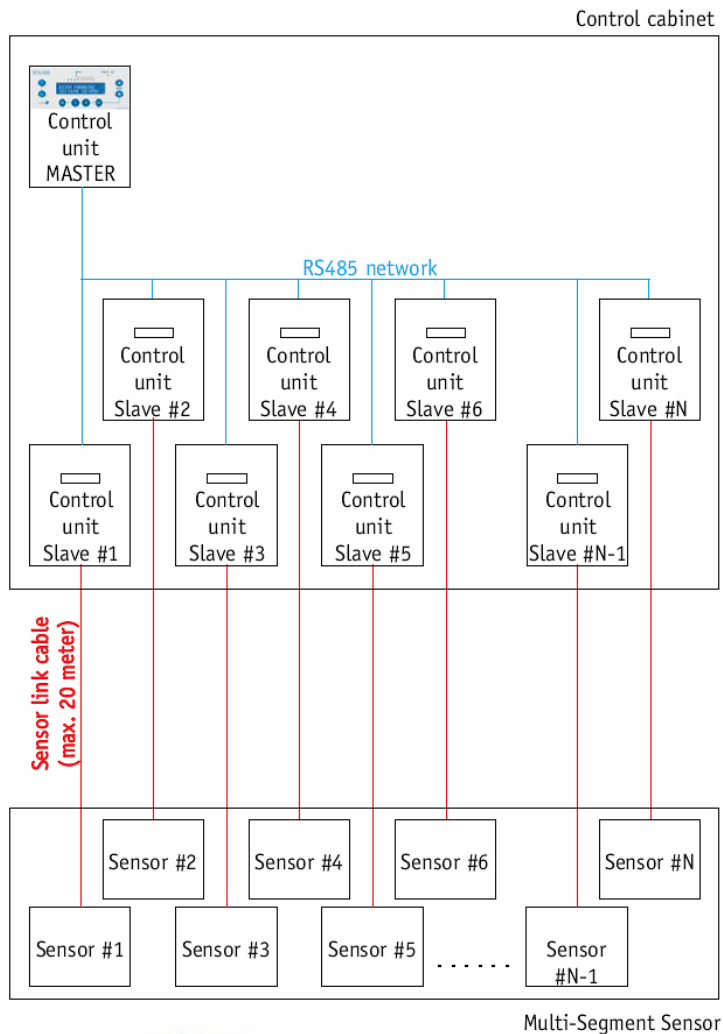


Control cabinet



*New single-board technology: Using latest state-of-the-art SMD-technology brings advantages as noise immunity and enhanced reliability.*





### METAL SHARK® COMBI - System

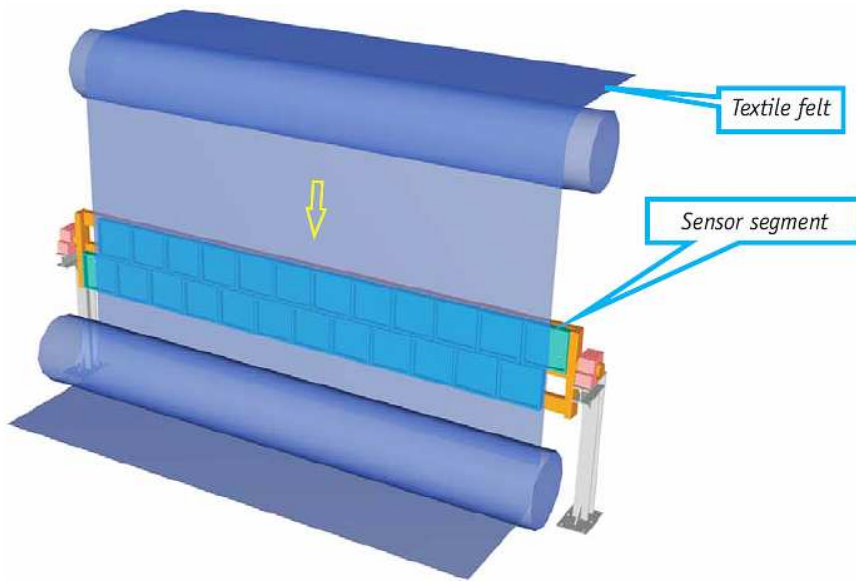
The metal detector is constructed as a multi-segment-sensor. The total Inspection-field of the detector is thus divided into several single zones, each of them being about 300 mm wide. This makes it possible to assign detected Metal particles to a definite area of the Textile width.

#### Slave Control Unit

Neighbor segments overlap each other to have the full sensitivity even at the segment edges. Each sensor segment consists of a balanced pair of inductive coils and a slave control unit.

#### Master Control Unit / Network RS485

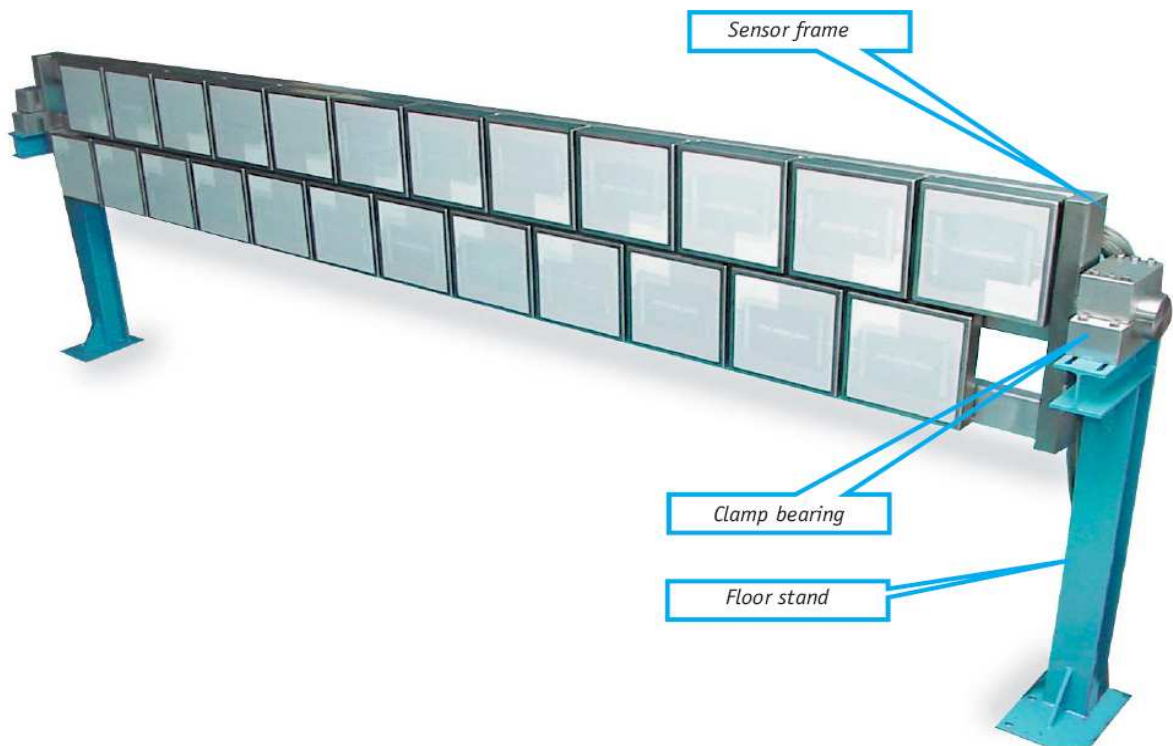
Parameter setup is done at the Master control unit only. All parameters are transmitted to the Slave control units through the integrated RS485 digital network. This ensures that all sensor segments are always configured with the same metal sensitivity.



### METAL SHARK® COMBI - Mechanics

The sensor frame sits in two solid aluminum clamp bearings. Those bearings allow to precise adjust the sensor surface in parallel with the product flow.

Last but not least are the two clamp bearings mounted on top of the floor stands which are also part of the delivery.



## METAL SHARK® COMBI - Technical Data

### Power supply

85-264 V / 50-60 Hz

### Power input

1kW + 0,1kW \* number of segments

### Out signals

General metal alarm (dry contact)  
General error alarm (dry contact)  
Segment metal alarm (dry contact for each segment)

### Features

Flash light (general metal alarm)  
Horn (general metal alarm)  
Segment metal alarm (red lamp per segment)  
Run indicator (green lamp)  
Error indicator (red lamp)  
Reset metal alarm push button (internal + remote)  
Local 24V DC (2.5 Amps) power supply (Siemens brand)  
Cabinet cooling fan  
Automatic circuit breaker 16A  
Over voltage surge protection 230V AC  
Mains filter (electromagnetic interference filter)  
Mains switch  
UPS uninterruptible power supply  
Double shielded sensor coax cable  
Power-on timer for proper boot procedure  
Electric equipment = Klöckner Moeller brand  
Cabinet = Rittal brand, grey RAL 7035

### Ambient temperature

-10...+50 C / 15...120 F

### Degree of protection

Sensor IP65 / Control cabinet IP54

### Sensor link cables

10 m (4.1 ft), with conduit

### Measuring

Balanced pair of inductive coils  
Multi-channel-technology

### Electronics

Latest digital technology  
Digital dynamic noise filter  
Digital balance control  
Digital frequency control  
Self-monitoring of function  
No maintenance required  
Self-adjusting of all circuits  
PowerDrive circuit

### User interface

Keyboard and LC-display  
Intuitive, self-explaining menus  
LEDs bar meter (metal signal)  
LEDs for OK / Fault / Metal  
Programmable function keys  
Password protection  
Product library for 120 set-ups  
Product teach manager  
Timer for reject device control  
History feature (data logging)

