

METAL SHARK® IN Liquid

For Pipelines with Fluid and Semifluid Products

The IN LIQUID is a metal detector specifically designed for fluid and paste-like products. Sensor and control unit housing are made of sturdy stainless steel, appropriate for use in the food industry. With a maintenance free design and high quality construction, for reliable operation in the most challenging industrial environments.

Throughput Hose Under High Pressure

- Special care has been taken to design a reliable high pressure throughput piping. The sturdy pipe resists high pressures up to 16 bar (220 psi).
- Stainless pipe flanges can be tri-clamp, milk-thread and special aseptic links.
- The standard hose is suitable for high-temperature and CIP/SIP cleaning ability. Available pipe diameter are 40/50/65/80/100 mm (1,5/2/2,5/3/4 inch).



Choose the Most Appropriate Rejector for Your Application

- With the *reject valve metal objects* are separated out of the stream promptly. Cassel has different valve designs available:
 - The *EX-BF Butterfly* valve is operationally reliable, easy to maintain and have especially been developed for CIP/SIP applications.



- The *EX-MH Arc Valve* is used in fully aseptic applications. A full unrestricted flow that allows no product restrictions through the valve.



Assembly Frame Options

- The hygienic design is easy to clean and all tubing are complete closed welded on all sides.
- Available options are:
 - *Floor stand*, with/without castors wall mounting frame
 - *OEM frames* to adapt into other machinery
 - *Control unit* attached to sensor/control unit for separate wall mounting



Performance Check

- According to *HACCP* the metal detector is a critical control point and therefore, it must be checked regularly. A special inspection hole in the pipeline allows to test the detector function regularly and easily. To this aim a flexible test stick with small metal balls is pushed through the pipe.



METAL SHARK® Controller

Digital Control Box for All METAL SHARK® Types

No Maintenance

■ The *automatic balance and calibration control* ensures many years of reliable performance. The requirement for costly routine manufacturer actions is eliminated. Once set, the METAL SHARK® does not require any manufacturer adjustment at all. Therefore implementing the METAL SHARK® will help to save your service budget.

■ By using *SMD technology* all circuits have been miniaturized and housed on just one multilayer main board. In the unlikely case of a malfunction, most factory electricians should be able to replace the board.

Intuitive Operation

■ The display shows solely necessary information, which is really required. The software is self-explanatory. *Reduction to the essentials* results in easy, clear and transparent operation.

■ *Teaching menu* – product features are captured and taught automatically by pushing one single button.

■ *Product library* – features of 120 different products can easily be stored and recalled.

■ *Automatic self-control* – if a malfunction occurs it will be displayed on a separate output contact.

■ *Password protection* prevents any unauthorized operation of the metal detector.

Outstanding Sensitivity and Stability

■ The METAL SHARK® provides outstanding sensitivity, accuracy, stability and precise compensation of product effects.

■ *Auto calibration* – enables easy and fast teaching of product features, which allows the compensation of product effects. Due to the selectable pre-set features DRY, WET, SALTY and MEAT it is exceptionally effortless to set the metal detector for new products.

■ *Phase Tracking* – product effects are compensated and readjusted in an intelligent way.

■ *Precise metal detection at highest level* – digital noise filters eliminate any undesired signals.

■ *Multi-channel technology* for the optimum detection of all kinds of metal: ferrous, non-ferrous (like aluminum or copper) and stainless steel.

■ *Highest endurance* – the extra sturdy construction of the sensor is designed to operate in extreme and harsh applications, in which other brands fail. The sensor head is encapsulated entirely in a solid epoxy block, sealing and protecting the aperture long-term. This qualifies the METAL SHARK® perfectly even for wet and most challenging environments.



Specifications

Model	METAL SHARK® BD
Housing	stainless steel, rust-proof
Control Electronics	digital signal processor, digital noise filter, digital balance control, digital frequency control with synthesizer, digital temperature shift control continuous self monitoring, maintenance-free, no need for calibration, self calibration of all circuits, PowerDrive circuit
Output Signal	metal alarm with potential-free changeover contact, metal alarm for 24 V SPS activation, metal alarm for activation of 24 V pusher magnetic valve, operating state/disturbance with potential-free changeover contact (230 V/5 A), performance validation upon request, visual and acoustic alarm
Input Signal	(all 24 V DC) reject trigger, e.g. photo sensor, monitoring of compressed air, reject affirmation, metal alarm confirmation, keyboard interlock, conveyor belt control, change of product, teaching mode
Measuring Method	inductive, multi channel operation, balanced receiver coil
Metal Detection	ferrous, non-ferrous (e.g. aluminum or copper) and stainless steel
Product Library	120 storage spaces
Product Compensation	performed automatically, with teaching mode
Protection Type	IP65, with option LPW = IP66, with option HPW = IP67
Ambience	temperature -10 to + 50 °C, humidity 30 to 85%
Product Temperature	-10 to + 80 °C
Power Supply	one phase 85 ~ 264 V AC, 50/60 Hz, 100 Watt
Interface	RS232, RS485, provides documentation according to HACCP and IFS standards