



METAL SHARK® BD

Metal Detector for Conveyors

METAL SHARK® BD – Metal Detector for Conveyors

Cassel has installed over 5,000 metal detectors all over the world. Local technical service is available in more than 40 countries performed by factory trained service support staff. Cassel's strategy is offering our customers trustable high quality at low price (best product, best price, best service, best long-term performance).

METAL SHARK® Electronics

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.

Sensitivity and Stability

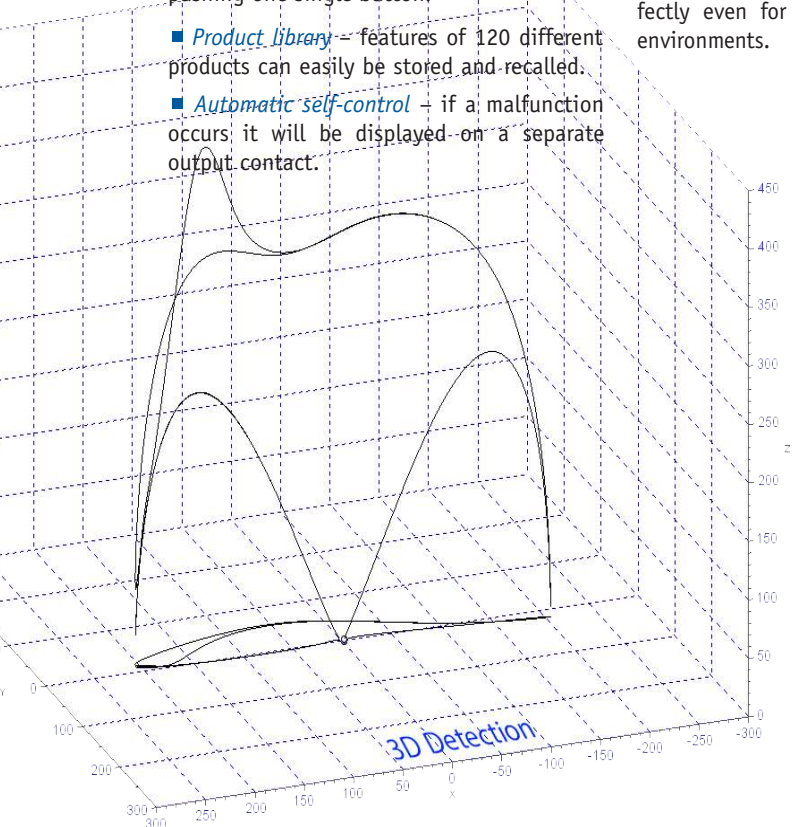
- *Precise metal detection at highest level* – digital noise filters eliminate any undesired signals.
- *Auto calibration* – enables easy and fast teaching of product features, which allows the compensation of product effects. Due to the selectable pre-set features DRY, WET, SALTY and MEAT it is exceptionally effortless to set the metal detector for new products.
- *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.

3D Detection

CASSELs unique *4-Quadrant-Technology* has evolved to the 3rd dimension. The *MultiPhase* and *BOOST FACTOR technologies* add multi-phase measurement and signal amplifying factors to this established technology and thus create 3-dimensional signal models of your products signatures – as unique as a fingerprint.

- *BOOST FACTOR: up to 50% more accuracy* – SHARK detects stainless steel up to 1mm smaller compared to conventional detectors.
- *MultiPhase: Continuous adjustment to changing conditions for even more stability* – SHARK can easily cope with frozen or heated products, changing product orientations or temperatures as well as cooled, heated or humid environments.

The METAL SHARK® with 3D Detection provides outstanding sensitivity, accuracy, stability and precise compensation of product effects.



HACCP and IFS Compliance

- **Performance validation** – according to HACCP metal detectors are classified as critical control points. Continuous checking is required to fulfill the standards. If desired our performance validation automatically prompts the operator to test the performance of the METAL SHARK® at pre-set intervals.
- **Operation history** – metal detections or changes in parameter settings etc. are stored in a log list stating date and time. The list can be read on the display or exported via serial port.
- **Ready for SHARKNET® software** – SHARKNET® enables an automatic data documentation onto a Windows-based PC to fulfill HACCP and IFS standards.

LPW Option for Low Pressure Wash-up According to IP66

This option features the METAL SHARK® electronics protected in a double housing made of stainless steel. The device is suited for wash-up with a non-pressure water hose.



tor meets IP67 standards. Daily wash-ups with a steam hose at maximum pressure of 60 bar/900 psi can be conducted. This feature has proved its worth in sausage productions with several wash-ups a day.

HPW Option for High Pressure Wash-up According to IP67

A double housing of stainless steel securing the METAL SHARK® electronics and a specially sealed aperture ensure that the metal detec-



Examples for Installation Solutions



METAL SHARK® BD with LPW option during wash-up



METAL SHARK® BD in line behind a deep drawing machine



Standard conveyor type METAL SHARK® HW



METAL SHARK® on Conveyor for bottles type JAR2

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	-30 °C 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

Metal Detection, X-Ray and Weighing Systems



METAL SHARK® GF Gravity Feed



METAL SHARK® Checkweigher



METAL SHARK® HW



METAL SHARK® PH Pharma



METAL SHARK® IN Liquid



METAL SHARK® IN MEAT



As a manufacturer Cassel is committed to highest standards of quality. For more than ten years our goal has been to ensure the quality of your products. Our reputation has been earned by protecting yours. We supply customers in different industries worldwide such as Foods, Plastics, Pharmaceuticals, Textile, Timber and Mining.

Our headquarters and state of the art manufacturing facility are located near Hannover in the heart of Germany. Each year we manufacture and deliver over 1000 metal detection systems. Approximately 80% of the production is heading for export markets. To ensure you get the very best of service and support wherever on the globe you are using our metal detectors, we have a worldwide network of partner agents.