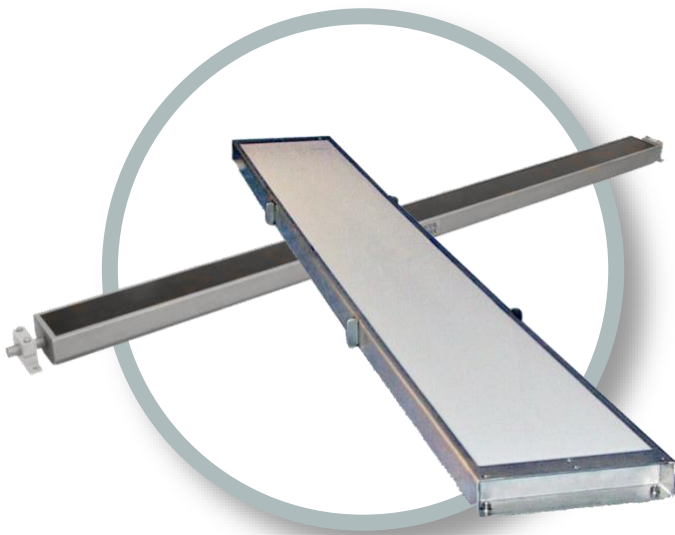




METAL SHARK[®] FL

METAL DETECTION FOR WEBS



Features

- Reliably detects magnetic and non-magnetic metals in fabrics, webs and flat products
- Flat detector surface with rotatable mounting hardware to align with ascending or descending product path.
- Easy-to-install under or between conveying lines
- Intuitive control and easy installation with autocalibration and TeachAssistant
- Very low maintenance with automatic balance and calibration control

Highlights

- Best detection sensitivities due to CASSEL's proprietary signal analysis (4-quadrant technology)
- Memory for up to 250 products
- Easy-to-use with intuitive and multilingual menus
- 4-level password system, automatic log out upon timeout
- Documentation of all events and metal detection alerts
- IFS and HACCP reports available on display at the touch of a button
- Optional: Data transfer to USB interface or connection to the company network via SHARKNET[®] software
- Cyclical function monitoring with Performance Validation System (PVS)



METAL SHARK® FL

Metal Detection for Webs and Flat Products



Overview

The METAL SHARK® FL and FL compact metal detectors are typically used for the inspection of non-wovens, textiles/fabrics and films.

Both detectors are particularly flat and available in widths of 1,000 - 4,000 mm (39" to 157"). The FL compact features a rotatable mount so that it can be adapted to sloping webs.

Due to the high sensitivity of the FL models, even tiny magnetic and non-magnetic metal particles (e.g. iron, aluminum and stainless steel) are detected across the entire width.

Included

- FL detection unit (sensor)
- METAL SHARK® control unit

or

- FL compact detection unit
- METAL SHARK® control unit

Accessories & Extras

- Washable versions for hose cleaning (LPW) or optional high-pressure washdown (HPW)
- SHARKNET® connection for automatic documentation including HACCP, IFS or BRC standard
- Separate mounting of the control unit (e.g. wall mounting)
- Signalling devices (visual/acoustic)
- Issue of a Performance Verification Certificate (proof of functionality for audits) by CASSEL service technicians, e.g. during commissioning or maintenance

Application

- Monitoring of fabric, non-woven or synthetic webs, very shallow products moving on conveyor belts
- Quality assurance for incoming goods, outgoing goods or during ongoing production
- Machine or end user protection, e.g. against needle

Industries

- Textile, fabric and fleece
- Hygiene
- Paper, cardboard, packaging
- Various industries, when mounted under conveyor belt





METAL SHARK® FL

Metal Detection for Webs and Flat Products



Specifications

| | |
|---------------------------------------|---|
| Electronics | Digital signal processor, digital frequency generation, digital balance control, automatic calibration, digital noise filters, integrated flexible control functions |
| Input | 2 analog 0 ...10 V DC (option: 4-20 mA) 8 freely configurable 24 V DC signals, e.g. for rotary encoders, product identification, buttons |
| Output | 2 floating: "error" and "metal" 8 freely configurable 24 V DC signals |
| Inspection method | High-frequency magnetic field, multi-channel operation, balanced receiver coils |
| Metal detection | Ferrous, non-ferrous (e.g. aluminium or copper) and stainless steel |
| Product compensation | 250 memory locations, automatic product compensation |
| Enclosure rating | Control unit: IP65 Sensor: IP54 (optional: IP66) |
| Environmental conditions | Control unit: -20°C to +40°C / -4°F to +104°F Optional: to -40°C / -40°F or +55°C / 131°F Rel. humidity: 20% to 90% (non-condensing) Sensor: -30°C to +60°C / -22°F to 140°F, optionally up to +90°C / 194°F |
| Temperature of goods inspected | Standard: -30°C to +40°C / -22°F to +104°F Optional: -40°C to +60°C / -40°F to 140°F |
| Power supply | Single-phase 110-230 V AC +/- 5%, 20 W typ. (60 W max.) |
| Interface | RS232, LAN (optional, for SHARKNET®), USB (optional) |
| Maintenance | Very low maintenance, self-calibrating sensors |
| Diagnostics | Integrated diagnostic software, automatic self-test |

Special version & optional extras

- Temperature extension cold: Temperature range extended to -40°C (-40° F), resin seals remain elastic at low temperatures, special insulation, heated enclosure and other features.
- Temperature extension hot: Temperature range extended to +55° C, (+131° F), adapted enclosure, additional thermal insulation, replaceable filter fan, heat exchanger and/or active cooling units.
- High temperature extension for goods inspected: Goods temperature up to +120°C (248° F) max., this option provides IP54 grade enclosure for the sensor.
- High Pressure Washdown (HPW) / Low Pressure Washdown (HPW): IP rating upgrade, adapted sensor seal, additional seals installed and a double housing for the controller electronics
- SHARKNET® software connects METAL SHARK® metal detectors with a central computer, providing centralized storage of all operating data plus batch and alert documentation for HACCP and IFS compliance.



METAL SHARK® FL

Metal Detection for Webs and Flat Products



Sensitivities of METAL SHARK® FL

| Sensor width 200 – 1,000 mm | | | | | | | | |
|-----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Distance from sensor (mm) | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| Iron ball (Ø mm) | 0.8 | 1.0 | 1.8 | 2.2 | 2.5 | 3.8 | 5.0 | 6.0 |
| Non-magnetic metal (Ø mm) | 1.0 | 1.2 | 2.2 | 2.6 | 3.0 | 4.6 | 6.0 | 7.2 |
| Stainless steel (Ø mm) | 1.2 | 1.5 | 2.7 | 3.3 | 3.8 | 5.7 | 7.5 | 9.0 |

| Sensor width 1,000 – 4,000 mm | | | | | | | | |
|-------------------------------|-----|-----|-----|-----|-----|-----|------|-----|
| Distance from sensor (mm) | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| Iron ball (Ø mm) | 1,0 | 1,5 | 2,2 | 3,0 | 3,4 | 5,5 | 7,0 | 8,0 |
| Non-magnetic metal (Ø mm) | 1,2 | 1,8 | 2,6 | 3,6 | 4,1 | 6,6 | 8,4 | 9,6 |
| Stainless steel (Ø mm) | 1,5 | 2,3 | 3,3 | 4,5 | 5,1 | 8,3 | 10,5 | 12 |

Disclaimer: Sensitivities largely depend on ambient conditions as well as on the properties and conditions of the goods to be inspect-ed. The dimensions listed above are provided for general indication only. Please note that these dimensions are not contractually guaranteed.

- Metal-free zone (Upstream/downstream of detector)
Non-moving metal = 250 mm, moving/vibrating metal = 500 mm
- Speed of goods being inspected: 25 – 3,000 mm/s (1" – 9.8 ft/s)

Sensitivities of METAL SHARK® FL compact

| Sensor width 200 – 1,500 mm | | | | | | | | |
|-----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Distance from sensor (mm) | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| Iron ball (Ø mm) | 1.0 | 1.5 | 1.8 | 2.5 | 3.3 | 5.5 | 6.5 | 8.0 |

| Sensor width 1,500 – 4,000 mm | | | | | | | | |
|-------------------------------|-----|-----|-----|-----|-----|-----|-----|------|
| Distance from sensor (mm) | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| Iron ball (Ø mm) | 1.5 | 2.0 | 3.0 | 4.0 | 4.5 | 6.5 | 8.0 | 10.0 |

Disclaimer: Sensitivities largely depend on ambient conditions as well as on the properties and conditions of the goods to be inspect-ed. The dimensions listed above are provided for general indication only. Please note that these dimensions are not contractually guaranteed.

- Metal-free zone (Upstream/downstream of detector)
Non-moving metal = 250 mm, moving/vibrating metal = 500 mm
- Speed of goods being inspected: 25 – 4,000 mm/s (1" – 13.1 ft/s)

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