Metal Detection

High Performance Metal Detection
For the Inspection of Bulk Products

Profile RB
Profile RB LS
Maximum Detection Performance
Designed for Bulk Product Inspection
Suitable for All Environments
Easy System Integration
High Performance Metal Detection
For Bulk Product Inspection Applications

METTLER-TOLEDO Safeline Profile RB and Profile RB LS rectangular aperture metal detectors are designed to inspect all manner of bulk products for metal contamination in food processing and packaging environments.

When integrated with conveyorised product handling systems, RB detectors can increase productivity, improve the competitiveness of your business, reduce overall costs and support compliance with food safety standards.

Maximum Reliability Regardless of the Working Environments
RB Series detector heads are available in a choice of finishes and sealing standards. The requirements of IP69K standard are met through rugged, heavy duty, all stainless steel construction with multiple seals to electronic enclosures to withstand the rigours of heavy wash-down regimes and the most hostile environments. Alternatively, medium duty stainless steel and painted finish versions are available for use in less aggressive, light washdown and wipe down environments. In all cases, dirt traps have been eliminated enabling manufacturers to meet exacting hygiene standards in all environments.

RB Series metal detectors can also be supplied for use in dusty environments incorporating full compliance with ATEX/IECEx.
Benefits for You and Your Business

Metal detection systems utilising Profile software provide the means to deliver significant benefits for your business. Maximising product quality, enhancing manufacturing efficiency and delivering the ultimate level of protection for your customers is just the beginning of the story.

Harnessing these key benefits builds protection around your business enabling you to increase productivity, reduce overall manufacturing costs and improve competitiveness for maximum profitability.

- **Increased Productivity**
  Profile RB series metal detectors enable productivity to be optimised to ensure uptime is maximised and costly downtime is all but eliminated. This effectiveness is realised through:
  - Simple set-up and operation
  - Reliable, consistent performance
  - Low maintenance requirements
  - Easy clean system designs

- **Reduced Manufacturing Costs**
  Profile technology enables overall lifetime costs to be managed and kept to an absolute minimum through:
  - Eliminating false rejects & product waste
  - Reducing performance monitoring requirements and costs
  - Improving the ability to demonstrate due diligence
  - Utilising innovative, futureproof design

- **Improved Competitiveness**
  The combination of increased productivity and reduced manufacturing costs enables your business to win more customers by providing:
  - Compliance with regulatory, industry and retailer standards
  - Improved hygiene standards
  - Protection of your brand and your reputation
  - Maximised product quality
To implement a world class contamination detection and prevention programme, it is necessary to undertake regular monitoring of system performance through a series of predetermined tests. The interval between executing these tests is usually dictated by the ability of the factory to quarantine all the products processed between tests. Test intervals can be extended through the use of the Profile Predictive Analytics and Condition Monitoring features.

Condition Monitoring continuously monitors critical parameters that affect the correct functionality of a metal detector to allow an early warning of potential issues with the detector. The Predictive Analytics feature monitors the impact of any changes in the metal detector sensitivity and will give an early warning alarm before the metal detector performance falls below the factory specification.

Using these features, a carefully designed and controlled contamination detection programme can be implemented with less frequent testing. Reducing the frequency of testing increases the operator efficiency and production line capacity. As an added bonus, the number of products wasted during testing will be reduced.

Advanced Performance Monitoring Routines
Enhanced test routines allow users to gain a greater degree of confidence in the performance of the system, by measuring the size or the signal created during a test and comparing this to a predetermined level. By monitoring the margin of safety, an informed decision can be made as to the exact interval required between scheduled tests.
Managing Your Critical Control Points
For Maximised Quality

When working within a formal HACCP programme, many metal detectors are employed to monitor a Critical Control Point (CCP). Profile comes with on-screen HACCP reporting to ensure effective control of the metal detector as a CCP device.

Greater Control of Login Processes
A commonly reported failure mode of plant and process equipment is operator error or unauthorised access to the controls of the equipment. The discriminated Metal Detector Access Log compiles a report which can be viewed showing all logins made to the controls of the metal detector. This log will display the name of the operator making the change and the time and date of the occurrence for all change events.

For easy interpretation of the access log, the entries are colour coded. Login events by QA personnel completing performance monitoring testing are coloured green and any other log in events are displayed in red.

Increased Login Access Security*
To provide users with an increased level of access security, a high level access software routine is provided which complies with the requirements of FDA 21 CFR Part 11. Access to all of the metal detector controls is password protected via a dual level user name and individual password login.

The Due Diligence Enhancement Software which includes the added security derived from the 21 CFR Part 11 login provides an opportunity to reduce the frequency of scheduled performance monitoring tests. The system provides the greatest level of system integrity and security possible and working in conjunction with the on-board Condition Monitoring system makes a reduction in the test frequency a real possibility resulting in a considerable reduction in the cost of ownership.

* Option available on LS models, fitted as standard on Profile RB solutions.
Enhanced Operations Through Software

Monitoring Products & the Environment
For Improved Detector Performance

Having the ability to understand the way products interact with a metal detector and to understand the relationship between the product signals and the metal detectors settings can improve detector set-up. This can be used to improve performance, achieve greater levels of compliance and lead to increased market competitiveness for your business.

Monitoring the working environment of the metal detector can ensure false rejects are eliminated and that maximum performance is maintained. The Product Data and short term signal monitoring software provides detailed understanding of the set-up parameters and allows new levels of operating precision to be attained.

On-Screen Histograms for Greater Control*
In-built Product Signal Strength and Product Phase Angle histogram displays give a graphical representation of all inspected products. Up to 50 million data packets can be stored within the software. This data can be collected over prolonged periods allows far more meaningful decisions to be made with regard to detector set-up and operational settings.

Changes in ongoing collected data can be signalled allowing remedial action to be taken to either the process or the metal detector settings to ensure standards are maintained and false rejects are avoided.

Pictorial Vector-Diagram Display Shows Key Signals*
To aid initial set-up, a unique Product Vector Diagram can be displayed which shows the signal generated by the product in conjunction with the active product settings for the product in question. This is useful for applications where the product exhibits a "product effect" which is common where the product has high inherent moisture content. Signals generated from this type of product are more complex than those from dry products and by generating an image of the signals, it is possible to improve performance in the set-up process.

During the set-up routine the metal detector captures the size and angle of the active product signal and displays this pictorially in conjunction with the operational settings derived from the auto set-up routine. Adjustment routines allow users to tune the settings to deliver the optimum in performance.

* Option available on LS models, fitted as standard on Profile RB solutions.
Staying in Control
Manage Data and Information Efficiently

Unrivalled Communications - Delivering Information Where You Need It
Profile can be configured with a range of data collection facilities and connectivity solutions to support your decision making and data collection needs.

Improving Methods of Data Collection
Profile and Profile LS can be configured with a USB connection to collect metal detector data on to a memory stick for future auditing purposes. Connectivity options such as RS232 and Ethernet are available for connection to printers and other external devices.

Better Factory Management System Integration
Profile and Profile LS can be supplied with a Fieldbus Integration Module (FIM) to allow connection to a range of industry standard protocols (EtherNet/IP, Profinet IO or Modbus TCP) enabled devices such as PLCs and Manufacturing Execution System (MES). Profile also supports OPC DA integration.

ProdX
The Integrated Product Inspection Data Collection Software Solution
Profile and Profile LS metal detectors can be fully integrated with METTLER TOLEDO's ProdX software solution provides data collection for all Product Inspection equipment. (see separate brochure)

Traceability, performance verification and proof of regulatory compliance have become essential requirements for modern metal detection equipment. Profile and Profile LS detectors can be equipped with software routines that assist ongoing performance monitoring. More importantly, detectors can be equipped with advanced data collection facilities that record detector usage and provide information on product throughput. Cache storage, histogram displays and Ethernet communications allows the metal detector to be used as a useful data collection device.
Reliable Removal of Contaminants
The effective removal of metal contamination from your manufacturing process is critical to ensure product quality is optimised and to afford maximum protection of your customers and your business.

A choice of standard or bespoke conveyor systems
RB series detectors can be supplied fully integrated with material handling and conveyorised systems to ensure the correct contaminated product or pack is removed from your process every time.

Standard configurations such as the well proven Series 200 conveyor design are available with many options from simple stop alarm systems through to systems with automated rejection systems. Alternatively, our experienced design team are able to design bespoke systems tailored to meet your exact needs. These can incorporate special rejection devices and a host of secure failsafe systems to meet the demands of all leading food safety standards.

Meeting Compliance Requirements with IPac
All RB Series metal detection systems are supplied with a METTLER TOLEDO IPac installation and performance verification package. This provides the necessary documentation to support compliance with industry standards, prove due diligence has been exercised and simplify the task of meeting external auditor requirements.

www.mt.com/metaldetection
for more information

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Subject to technical changes
© 06/15 Mettler-Toledo Safeline Limited
Printed in the UK
SLMD-UK-BRO-EN-RB-Series-0615