Metal Detection

Distributed by
DARTRONICS, INC.
PACKAGING AUTOMATION SPECIALISTS

Profile
Profile LS

Increasing Productivity

Reducing Costs

Improving Competitiveness

Meeting Compliance Needs

Total Protection
For You and Your Customers

METTLER TOLEDO

Caring for You and Your Customers
Maximizing Quality and Performance

When you really care about the quality of your products and the safety of your customers, there can be only one choice when it comes to selecting a metal detection solution – a METTLER TOLEDO Safeline Profile or Profile LS detector.

Advanced Metal Detection Technology at Your Fingertips

Profile and Profile LS metal detectors utilize sophisticated software technology to provide the most advanced metal detection systems for dry product applications on the market with total inspection flexibility for a wide range of applications and products.

A large, full color touch screen interface with a Windows® style, icon driven menu provides easy, intuitive operator access. The interface simplifies procedures and places a host of valuable process information at the fingertips of your whole manufacturing team.

A Customizable Solution Now and into the Future

A choice of system types with the ability to configure feature sets to suit your processes means that you can be sure that your detector is totally future-proof with the ability to grow with your business needs. All detectors incorporate robust construction standards to provide reliable, consistent, on-line performance regardless of the working environment.

Supporting your Compliance Needs

Profile metal detectors can be installed at all critical control points (CCP) of your production processes. This enables your business to comply with HACCP requirements and the broader needs of external food safety regulations and standards.

All Profile and Profile LS detectors support compliance with the GFSI standards and external codes of practice including:

- BRC (British Retail Consortium)
- IFS (International Food Standard)
- SQF 2000 (Safe Quality Food)
- ISO 22000
- Major Retailer Standards
- Food Safety Modernization Act

Benefits for You and Your Business

Metal detection systems utilizing Profile software provide the means to deliver significant benefits for your business. Maximizing 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 metal detectors enable productivity to be optimized to ensure uptime is maximized and costly downtime is all but eliminated. This effectiveness is realized 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
- Utilizing 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
- Maximized product quality

Detecting More Metal
For Complete Customer and Brand Protection

Profile technology provides the ultimate in metal contaminant detection capability for dry product applications. All metal contamination including ferrous, non-ferrous and even the most difficult to detect non-magnetic stainless steels are readily identified enabling them to be removed efficiently from the manufacturing process.

Ultra-High Frequency to Detect the Most Challenging and Irregular Shaped Contaminants

Ultra-high frequency operation pioneered by METTLER TOLEDO Safeline greatly improves detection sensitivity, particularly in the case of non-ferrous and non-magnetic stainless steel contamination. This in turn delivers the added benefit of improvements in the detection of non-spherical and irregular shaped contamination such as wire and swarf.

The Versatile Inspection Solution

A wide choice of high and ultra-high frequency combinations gives greater flexibility and long term future proofing allowing inspection of widely differing products should the need arise.

Intelligent Multi-Channel Technology Delivers Greater Detection Capability

The detection capability of Profile and Profile LS metal detectors is optimized by the operation of multiple detection channels which combine to reduce the overall size of the detection envelope. Detection sensitivity is further enhanced through the use of intelligent product profiling software which ensures even the smallest pieces of metal are detected providing even greater levels of protection for you and your customers.
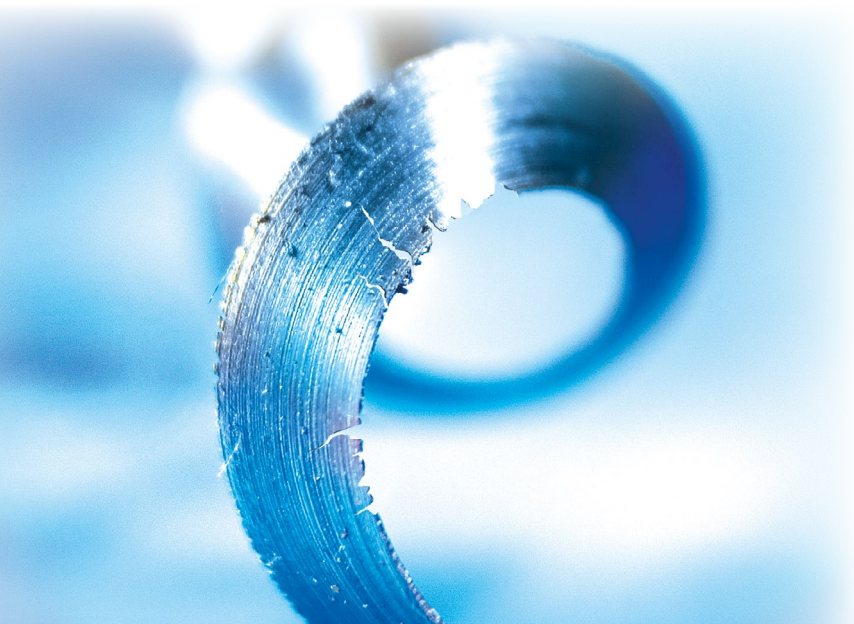
Maximizing Efficiency, Minimizing Downtime
For Cost Reduction

Ensuring your manufacturing processes are robust, efficient and streamlined adds value to your business and enables you to develop the edge over your competition. Profile detectors provide a vital building block to establish improved processes and manufacturing efficiency.

All Profile family metal detectors include fully automatic balance control (ABC) which compensates for small changes in the detectors balance state ensuring long term performance

On board OEE reporting continually displays the OEE (overall equipment effectiveness) of the metal detection availability, quality and performance.

Enhanced vibration and noise immunity ensures long term performance and stable operation in process environments where both airborne electrical noise and high levels of vibration are present.
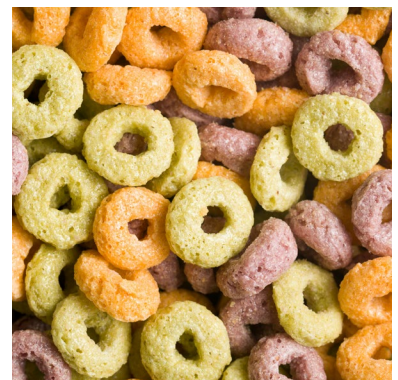
Maximizing Efficiency, Minimizing Downtime
For Operational Excellence

Ensuring your manufacturing processes are robust, efficient and streamlined adds value to your business and enables you to develop the edge over your competition. Profile and Profile LS detectors provide a vital building block in helping to establish improved processes and manufacturing efficiency.

Inspecting Multiple Products at a Single Setting

Consumer demands for greater product innovation and variety can leave manufacturers needing to accommodate frequent product and equipment settings changes. This can lead to increases in downtime and the risk of operational mistakes. With detectors using Profile technology, these issues become a thing of the past.

A unique "Change-Free" running mode provides a genuine single-setting function for multiple and diverse product types. The individual parameters for a number of different products are analysed and combined automatically into a single optimized product "Cluster" setting. This avoids the need for equipment re-setting or adjustment and reduces downtime. Most importantly, this is achieved without sacrificing performance and sensitivity.

Single-Pass Set-up reduces Downtime

Single pass auto set-up routines enable the detector to be set rapidly with minimal requirements for operator training. Typically, only one pass of the product is required during set-up.

The needs of users preferring to have separate product settings with individual parameters is addressed through a product library with an in-built memory which enables up to 100 different settings to be defined and stored for future recall.
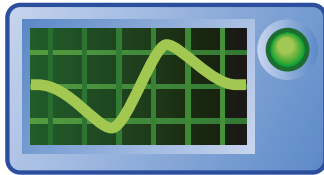
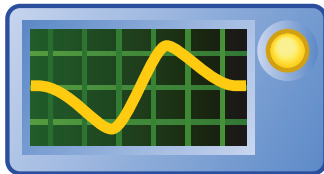Single-pass product setup reduces downtime dramatically
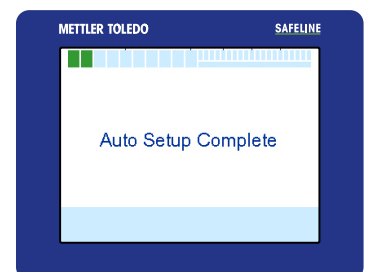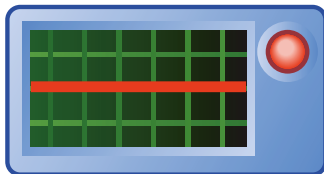
Increased Productivity
Extended Performance Monitoring Intervals

System Healthy

Early Warning

Fault Condition

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 Maximized 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.
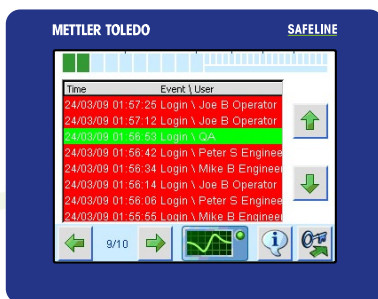

Advanced Color Coded
Operator Access Log

Greater Control of Login Processes

A commonly reported failure mode of plant and process equipment is operator error or unauthorized 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 color coded. Login events by QA personnel completing performance monitoring testing are colored green and any other log in events are displayed in red.
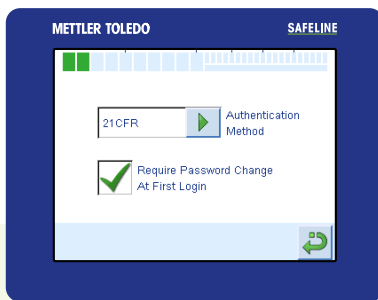
Dedicated FDA 21 CFR Part 11 Access Mode

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 FDA 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 solutions

Enhanced Due Diligence
To Meet Industry Standards

Today's modern digitally controlled metal detectors are more sensitive and more reliable than older machines but users still receive customer complaints and retailer non-conformance reports where metal has reached the consumer. Research has shown that, in the majority of cases, the contaminant in question was large enough to be detected by the metal detector in use, however, it still managed to reach the customer.

System failure can be attributed to many causes from a simple photo-cell failure through to reject system failure or, more critically, a detector head fault.

Profile and Profile LS metal detectors when supplied with a Series 80 or Series 200 conveyor system can provide a level of system integrity that guarantees total system performance to ensure the highest level of metal detection sensitivity is achieved with the highest level of failsafe system operation.

Failsafe Systems to Improve Processes

Numerous failsafe systems in conjunction with relevant hardware enhancements are available. These include:

• Intelligent reject confirmation system*

• Reject timing controlled by a rotary encoder

• Confirmation of the presence of the pneumatic supply for air operated reject devices

• Bin full monitoring to prevent the reject bin becoming full and thus preventing a contaminated pack being successfully rejected

• A reject check system that employs simple "hand shake" logic to continually monitor the status of the photo sensors employed within the reject timing and reject confirmation circuit*

• A reject bin integrity system to monitor the status of the reject bin (locked or unlocked)

**Components of a Failsafe Metal Detection System Detailed**
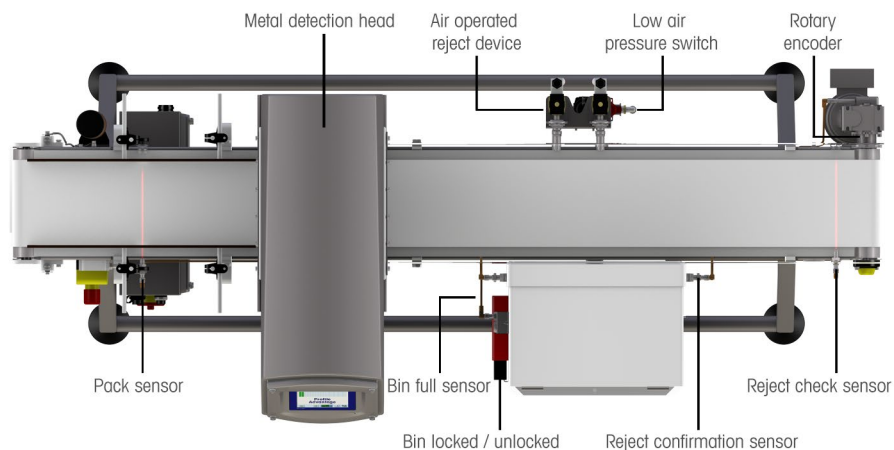
* Option available on LS models, fitted as standard on Profile solutions

Monitoring Products and 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.
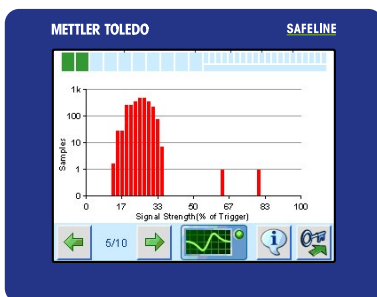
On-Screen Histograms for Greater Control*

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.
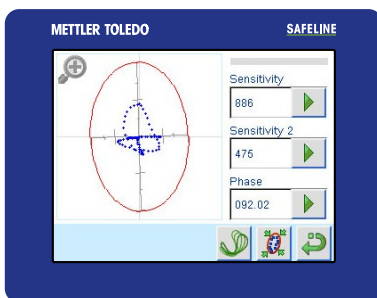
Pictorial Vector-Diagram Display Shows Key Signals*

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.
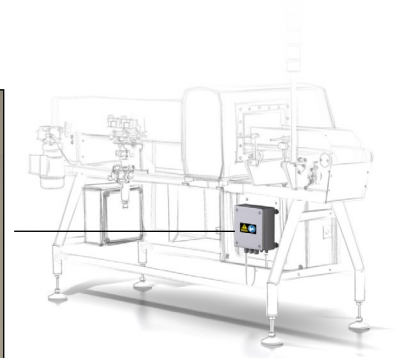
* Option available on LS models, fitted as standard on Profile solutions

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.

FIM enclosure box mounted onto the conveyor

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.

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.

Total Flexibility
Conveyorized Systems to Maximize Efficiency

GC Series

Integrate our metal detectors with the GC Series Conveyorized Systems for flexible inspection solutions to suit a wide range of light to heavy product applications. Efficient reject mechanisms and a suite of due diligence features help increase productivity and make compliance easier.

Bespoke Solutions

Whatever the application, our bespoke, customized conveyors will provide a reliable, high performance solution tailored to suit specific production needs.

IPac – Creating the documentation to Support Compliance

Profile metal detectors are supplied with a METTLER TOLEDO IPac installation and performance verification package to support ongoing compliance with internal and external standards. This comprehensive package provides full documentation for the installation, commissioning and verification process to ensure audit requirements are met every time.
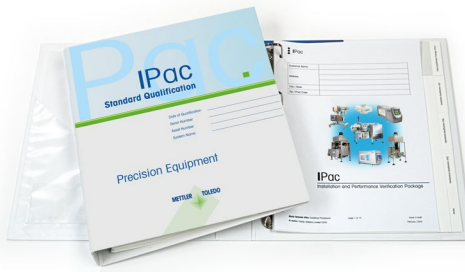
For more information

www.dartronics.com/metal-detection-solutions/

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