Industrial Weighing

Software
Weighing Terminals
Compact Scales
Weighing Platforms
Weigh Modules/Load Cells
Vehicle Scales
Dimensioning
Product Inspection

10.890 kg

184 NET PCS

x10 ✔ Σ
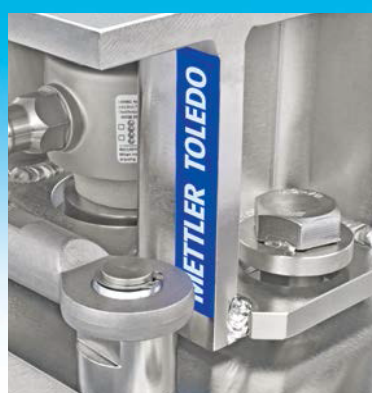
Weighing and Measuring
Competence for Your Industry

METTLER TOLEDO

Content

* For detailed information please see the separate catalog:
"Weighing Components"

Applications

Simple Weighing

Filling/Dosing

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Inbound/Outbound Vehicle Weighing

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Foreign Body Detection

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Dimensioning

Mobile Weighing

Customer Specific

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General
Introduction

The Right Solution
For Your Specific Needs

From food processing plants, active pharmaceutical ingredients manufacturing, pharma formulation, petrochemical and polymer plants, shipping and warehousing and heavy-duty machinery – we make our experience and knowledge available to you, regardless of whether you are looking for a laboratory application or an industrial-grade solution.

A truly global company

METTLER TOLEDO is a leading global supplier of precision instruments and the world's largest manufacturer of weighing instruments for use in laboratory, industrial and food retailing applications. The company holds the top-three market positions for several related analytical instruments, and is a leading provider of automated chemistry systems used in drug and chemical compound discovery and development. In addition, the company is the world's largest manufacturer and marketer of metal-detection systems used in production and packaging.

Pharma

The quality and safety of drugs are of highest focus by regulatory authorities worldwide. Our solutions help ensure Good Manufacturing Practice (GMP) and compliant documentation from paper printouts to CFR 21 Part 11-ready electronic batch documentation. Furthermore, they can be easily integrated to your MES or ERP system. We help you qualify our high precision weighing equipment and provide the service offering to ensure every measurement is and will remain qualified and that your processes are validated trouble-free.

▶ **www.mt.com/pharma**

Flavors, Fragrances and Cosmetics

Your processes demand the maximum in terms of equipment reliability, uptime, safety and productivity. Our solutions provide high accuracy where it counts, great speed where needed, full safety in hazardous areas, and they are tailored to comply with manufacturing and documentation regulations. They range from simple manual weighing, data-integrated tank and reactor-weighing to fully automated process-weighing solutions.

▶ **www.mt.com/flavors-fragrances**
▶ **www.mt.com/cosmetics**

Fine & Specialty Chemicals

Accurate, stable and reliable weighing processes are essential for any production step within the Fine and Specialty Chemicals industries. Manufacturers demand easy integration of weighing equipment into process management systems and expect full compliance in hazardous areas. METTLER TOLEDO provides a wide range of weighing solutions to help improve product quality as well process efficiency, uptime and safety.

▶ **www.mt.com/ind-chemicals**

Petrochemicals, Bulk & Intermediate Chemicals

This process environment demands instant access to reliable data, seamless connectivity to production and factory networks and up to 100% uptime. Our weighing solutions make process control easy in hazardous areas and do not compromise speed, ruggedness, reliability and safety. They help to optimize inventory control, ensure reliable and accurate weighing processes and implement low-maintenance tank and hopper weighing.

▶ **www.mt.com/chemical**
▶ **www.mt.com/refining**

Processed Food – Meat, Poultry, Dairy, Fruit, Vegetables, Bakery, Snacks, Chocolate, Confectionary, Convenience…

Hygienically sensitive areas require equipment that complies with the latest hygienic design guidelines and resistance against harsh cleaning procedures. Our solutions range from fast over/under portioning scales and rugged floor scales up to statistical quality control and recipe formulation systems integrated into your ERP environment.

▶ **www.mt.com/ind-meat-ready-meals**
▶ **www.mt.com/ind-bakery-snacks-sweets**
▶ **www.mt.com/ind-fruit-vegetables**

Bulk Food/Raw Material – Grain, Cereals, Sugar, Feed, Petfood, Oil…

Full transparency in your material flow, fast and accurate batching and filling procedures are essential to reduce product giveaway and increase your profitability. Rugged heavy-capacity tank and silo scales, a wide range of truck and rail scales and easy integration into DCS/MES systems help to accelerate and automate your processes to meet your business goals.

▶ **www.mt.com/ind-bulk-foods**

Beverages – Water, Soft Drinks, Juice, Beer, Spirits, Wine…

Accurate repetitive formulations, high-speed filling and exact net-content control are important to fulfilling legislation and keeping your customers happy. We offer all kinds of filling and batching solutions, stand-alone or networked formulation or statistical quality-control systems to help to improve your profitability.

▶ **www.mt.com/ind-dairy-beverages**

Raw Materials and Aggregates

Heavy-duty vehicle scales provide accurate control of the material produced by your mine or quarry. Choose from a complete line of truck and rail scales for static or dynamic weighing.

▶ **www.mt.com/ind-aggregates**
▶ **www.mt.com/ind-mining**
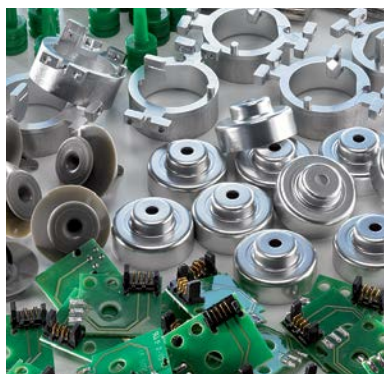
Manufacturing – Electronics, Metal, Plastic, Automotive

In demanding industrial environments, equipment must often take the strain. Rugged METTLER TOLEDO scales accurately record all necessary manufacturing data, count exact quantities for specific orders, and deliver documented results for quality assurance.

▶ **www.mt.com/ind-manufacturing**

Transport & Logistics

Weight and volume data are the basic parameters for planning and invoicing in the transport and logistics industry. Our solutions increase automation and improve productivity, accuracy and ultimately profit. We offer solutions measuring everything from letters to vehicles, in addition to high-speed packages applications.

▶ **www.mt.com/transport**
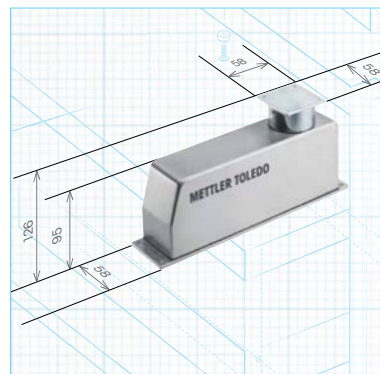
Engineering, Machinery & Equipment Manufacturing

Easy integration and competent global support are vital interests in engineering, machinery & equipment manufacturing. Our solutions are application- and industry-specific. They are made to be integrated into comprehensive systems. Mechanical, electrical, and data integration are facilitated by observing and supporting international standards.

▶ **www.mt.com/ind-weighing-components**

Providing Solutions
Across Your Value Chain

Scale-up & Production

R&D Laboratory

Quality Control Lab

R&D Laboratory

Our precise instruments are the foundation of research and quality control labs all over the world. High-performance weighing solutions offer a basis for solid R&D results. Pipettes are an essential tool for life science research. Thermal analysis instruments help to improve materials and their thermal behavior. Automated chemistry solutions accelerate the development of new chemicals.

Quality Control Lab

Quality control relies on fast and precise analytical measurement as well as good data management. Our analytical balances, titrators, pH meters, density meters, refractometers, melting point meters and pipettes can be tailored to each customer's application and provide a fully documented workflow for every quality control lab.

Scale-up & Production

Our sensors for measuring critical liquid analytical parameters, such as pH and oxygen levels, water conductivity and resistivity as well as total organic carbon, enable pharmaceutical, biotech and other companies to continuously ensure product quality and meet regulatory standards. Our transmitters and connectivity solutions make data collection and integration into control systems efficient and flexible.

Production & Filling   Packaging   Logistics   **Supermarket**   Food Retail
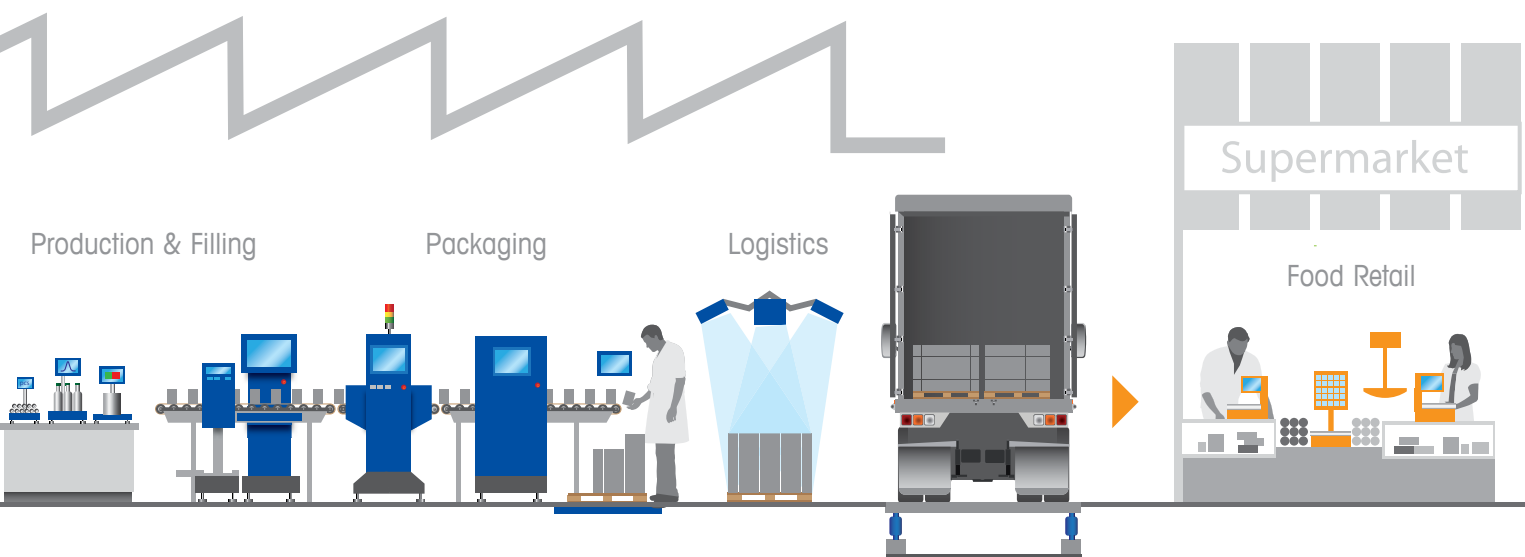
Production & Filling

We offer industrial scales in all sizes and formats and terminals and software to control and monitor manufacturing processes. Specialized solutions for formulation, piece-counting and many other applications help to improve productivity and reduce errors.

Packaging

Product inspection solutions help to safeguard product quality, safety and integrity, inside and out. Our systems for metal detection, check-weighing, x-ray and vision inspection provide confidence that product quality is maintained, compliance with industry standards is achieved and consumers and brands are protected.

Logistics

Our vehicle scale systems offer the highest level of accuracy and can prevent unexpected downtime thanks to a unique design and remote diagnostics capabilities. For express carriers, in-motion weighing, dimensioning and identification software solutions increase throughput and provide revenue recovery opportunities.

Food Retail

From retailers' receiving docks to their checkout counters, we enhance efficient handling of fresh goods with weighing, packaging, pricing, wrapping and labeling solutions. Internet-enabled scales greatly facilitate in-store marketing, fresh item management, promotions and more.

We Speak the Same Language

- **Are you looking for a demanding filling application?**
- **Do you need to embed an inventory management solution into your process?**
- **Do you have to comply with the latest regulations?**

Whatever your needs are, the solution is METTLER TOLEDO. We make sure that your processes are optimized for maximum efficiency and reliability. We deliver weighing systems that integrate productivity, quality, compliance and safety into complete solutions.

Basic Weighing

Easy, effective and efficient. The ideal solution for applications in which simple weighing is key. Clearly structured large format keys, with tactile feedback combined with the easy-to-read display for reliable and fast results. From micrograms to tons.

▶ **www.mt.com/ ind-basic-weighing**

Filling/Dosing

When filling intermediate bulk containers, drums, FIBC or vials – we provide fast, precise and repeatable results. High-performance weighing terminals connected to precision scales, weigh modules or load cells are designed to provide unmatchable speed and accuracy. Our systems have direct connectivity to PLCs via fieldbus interfaces and can continuously monitor your output, ensuring your filling process is consistently within tolerance.

▶ **www.mt.com/ filling**

Blending/Batching

For consistent mixtures, blend after blend, 24/7 with almost no downtime or shutdown, blending solutions from METTLER TOLEDO guarantee consistent, fast mixtures. Their flexibility and scalability allow for adaptation to the continuously changing and growing requirements from simple to the most complex applications. That is why repeatability from the first fill to the millionth is the hallmark of our solutions.

▶ **www.mt.com/ batching**

Formulation/Recipe

If valuable raw materials need to be added accurately to produce the right mixture, the METTLER TOLEDO line of PC-based solutions and terminals with scale bases is the right choice. Minor shifts or variations in ingredients can mean failure while repeatable adherence to the formula delivers profits. From manual to automatic weighing solutions, we can help with connectivity to a PLC, DCS or even to an ERP system like SAP.

▶ **www.mt.com/ formulation**

Inventory Management

Our solutions include tank, vessel and hopper weighing for inventory control, tank monitoring, and process control while mixing, agitating and filling. We provide greater process uptime, fast and repeatable material handling, inventory management and reduction of product losses due to higher accuracy and reliability.

▶ **www.mt.com/ tank-weighing**

▲ www.mt.com/industrial-applications

Inbound/Outbound Vehicle Weighing

Whether your business sells product by weight or volume, make sure that you are not shipping profit. With an accurate METTLER TOLEDO truck or rail scale, many customers realize that they can recover profit on vehicles filled by volume or mass flow by cross-checking against a more accurate vehicle scale. Vehicle scales operate in any rough environment and report system failures within milliseconds. METTLER TOLEDO connects to many types of ERP systems via Ethernet.

▶ **www.mt.com/ powercell-accuracy**

Statistical Quality Control/Process Control (SQC & SPC)

Ensure quality, don't overfill and save money. METTLER TOLEDO provides a comprehensive range of quality control products to meet your predefined product quality requirements o easily identify quality problems and sort them out systematically. Our SQC products range from embedded compact solutions up to our expert system FreeWeigh.Net® with distributed test sites and a centralized database.

▶ **www.mt.com/sqc**

Counting

Whenever inventory data is required, every part is important. With METTLER TOLEDO counting solutions, you can be sure that neither overfill nor underfill of one single piece affects your balance sheet adversely.

▶ **www.mt.com/ counting**

Over/Under Checkweighing

METTLER TOLEDO scales handle over/under checkweighing perfectly. High-speed scales and easy to read displays spot over- and underweight when checking or portioning.

▶ **www.mt.com/ over-under**

In-Line Checkweighing

100% weighing and sorting goods in motion with quality control, monitoring and controlling of filling processes made easy. Garvens checkweighers integrated into your production or transport lines can achieve a throughput of up to 1,000 packages per minute, with high accuracy and without product flow interruption.

▶ **www.mt.com/ garvens**

Foreign Body Detection

Product inspection made easy with metal detection and x-ray inspection systems from METTLER TOLEDO. Our solutions help to identify foreign bodies, ensure product safety and protect your brand.

▶ **www.mt.com/ safeline-xray**

Mail/Shipping

For shipping applications, our scales can be used with PC based shipping systems with multiple protocol support for easy interface, metric or imperial indication, and smooth or ball top platter for conveyor operations.

▶ **www.mt.com/ ind-mail-shipping**

Dimensioning

Measure the cubic space that an object occupies, mainly for freight costs and space planning. Our solutions fit depots of all sizes, from small logistics operations to large automated sorting hubs. We offer dimensioners only, as well as complete solutions with weighing, identification and sorter input.

▶ **www.mt.com/ dimensioning**

Mobile Weighing

Customer Specific

Weighing
Solutions

Maximized Profitability
with Thorough Quality Control!

Flawless and predictable product quality are cornerstones of successful production of consumer products, whether they are food, medicine or toiletries. To streamline processes, minimize material loss and stay within legal requirements advanced quality assurance tools are needed to guarantee consumer satisfaction and to produce under optimum conditions with maximum efficiency.

Today's consumers are demanding in terms of product quality and price, making them crucial factors for purchasing decisions and subsequently for the success of a product. Governments and trade associations issue and enforce laws and regulations about product quality, safety and traceability to ensure fairness in trade and to eliminate risks, which could arise from the usage of any product. In order to comply with the requirements and – at the same time – to be efficient and cost effective in production, advanced tools for quality control are an inevitable must.

The right partner for your strategic business decision
Based on years of experience with quality assurance in all significant producing industries, METTLER TOLEDO offers a wide range of suitable solutions, which combine acknowledge of processes, legal requirements and outstanding equipment to advanced systems providing crucial data for decisions to improve production while staying within the regulations given by lawmakers.

Matching solutions with fast payback for any need and system size
Statistical Quality Control (SQC) systems allow you to understand trends in filling processes while production is running. They give the possibility to take corrective action immediately and prevent a production run from being rejected or having to be reworked. Impacts to production cost are significant and grow proportionally to the cost for raw materials.

Optimized net content control in production
Scale embedded SQC systems are flexible and easy-to-use solutions, which are used to collect data for product net content control. They provide their statistics on the spot in easily readable reports and fulfill all tasks in order to optimize product fill while maintaining legal requirements.

If an all-enompassing solution with centralized data management for distributed data collection is needed, METTLER TOLEDO has the right product offering network connectivity to balances, scales, checkweighers, metal detectors and terminals.

Compliance to 21 CFR Part 11, IFS or HACCP
SQC solutions are designed and developed on state-of-the-art technology and in compliance with standards, such as GAMP. They have built-in functionality as required by today's regulations and thanks to continuous product evolution, they guarantee longevity of the investment for years.

Our solutions make your production more profitable and your products more competitive

Read more about SQC solutions on pages 42–43.

Reliable Production
Ensured by Modern Formulation Systems

Manual formulation remains very important even on highly automated cutting-edge production lines. Computer-based formulation systems allow faster production of continuously improved quality and lower rejection rates. The emphasis is on traceability and regulatory compliance.

Formulation systems have to cover a broad spectrum of requirements. They ensure traceability and regulatory compliance without significantly increasing operator workload.

Scalability
Customers have varying needs and applications, which can be met by a variety of products ranging from standalone systems up to comprehensive, scalable and integrated networked solutions. Formulation systems must fit into the customer's setup with minimal adaptation of existing processes.

METTLER TOLEDO offers solutions for simple formulation tasks and scalable configurations for integration into host ERP systems. This extensive portfolio allows the company to offer full customization.

Getting the mixture right
Simple and consistent prompts via the user interface ensure reliable weighing. Functions like batch identification, transfer of weight values within tolerance, ingredient overweight correction options and automatic calculation of active ingredients are important factors in achieving dependability and largely avoiding incorrect mixtures and waste of expensive raw materials.

METTLER TOLEDO products support your efforts to achieve high formulation quality with excellent weighing equipment (such as balances, industrial terminals, label printers and barcode readers).

Traceability
Seamless traceability in relating an order back to its production batches, raw materials or balances in which the batch has been produced is paramount in sectors, including the pharma or food industry (EU 178/2002).

21 CFR Part 11/111 conformity
Compliance with legislation and regulations (such as those of the FDA, especially in 21 CFR Part 11/111 relating to the pharmaceutical sector) plays a central role in formulation.

FormWeigh.Net® from METTLER TOLEDO meets regulatory and traceability requirements.

Read more about FormWeigh.Net® on page 44–45.

How Does Your Company
Measure Enhanced Productivity?

- **Is the precise measurement of raw material used?**
- **Is it by repeatability of material feed control in production and packaging areas?**
- **Is it by speed of the manufacturing cycles in your production process?**
- **Is it by increasing uptime by reducing equipment failures or predictive diagnostics?**
- **Is it by a quicker return on investment?**

However your company measures it, and whether your manufacturing needs to be simple or more advanced, METTLER TOLEDO can provide you with a wide range of solutions.

Time and time again, customers have deployed solutions to help them improve the management of their processes, and therefore improve their productivity.

www.mt.com/qi
www.mt.com/batching

Precise material delivery at high speed
The most common detractor to precise weighing of materials is vibration. Electronic techniques are often needed as a supplement to make the displayed weight more stable. **TraxDSP™** from METTLER TOLEDO is a filtering technique that has been proven over years of real world application.

In many applications, the characteristics of a raw material or its delivery system, variation in the rate at which material is delivered, can impact the accuracy of the material feed. Patented algorithms embedded in **Q.iMPACT™** material feed controllers from METTLER TOLEDO dynamically adjust target parameters in real-time, ensuring that feed accuracy is always achieved.

Increasing asset utilization
Increasing the rate of weighing cycles, feed cycles or batch cycles a process is capable of running can help enhance the overall productivity of your process. Utilizing TraxDSP™ helps optimize weighing throughput while filtering external disturbances that can impact weighing accuracy.

Increasing uptime
Anticipating failures before they occur ensures equipment is ready for use when you need it. This can be addressed by utilizing diagnostic tools. The **RAAD Box™** transforms conventional strain gauge load-cell systems into an advanced digital-sensor network enabling the analysis of every load cell in the system. The **TraxEMT™** suite of service tools provides built-in calibration test maintenance and diagnostics capabilities. Keeping vital statistics related to the operation of the weighing terminal can allow you to complete a batch, even if a load cell should get damaged mid batch.

POWERCELL® PDX® load cell technology coupled with METTLER TOLEDO weighing terminals provide advanced diagnostics functionality, assuring reliable operation in extreme conditions.

What Counts for You?

Efficient material management is the basis for success and profitability in manufacturing. Top quality parts-counting systems with the highest precision scales and easy integration in your inventory management system give you full control from goods-in to order processing.

Mobility with compact battery powered solution.

Up to four scales can be connected to a versatile counting terminal with large display and keyboard for error-free operation and barcode scanner/printer to properly identify/mark all components.

When verifying inventory, packing parts in containers, or confirming production quantities, every single part is important.

METTLER TOLEDO is the leader in precision parts-counting technology, ensuring that only the correct numbers of parts are delivered to you or your customer.

Material receiving
Regardless of the size or number of incoming items, counting scales verify the quantities received and provide accurate results in less time. Barcode scanners recall article information for immediate counting, and transactions are stored in the scale-embedded database for statistical analysis.

Warehousing
Smart weighing and counting solutions keep track of stock movements, ensure flawless goods storage and help you avoid out-of-stock situations through direct integration into ERP systems. Mobile counting scales facilitate and speed up order picking.

Production
Process automation and fast user guidance are essential to increase production efficiency and consistency. Semi-automated counting solutions ensure efficient packaging right in production.

Shipping
Counting solutions ensure that customer orders are accurately filled with exactly the right number of pieces, on time and with the required labels and documentation.

Good Weighing Practice™
The Global Weighing Standard

Operating a weighing system in full compliance with any current quality management system requires a good understanding of the regulations, the parameters influencing the measurement accuracy and the process requirements. GWP® is the only science-based global standard for efficient lifecycle management of weighing systems, developed from the expertise of METTLER TOLEDO.

A fully compliant quality management system is important in many industries that are subject to internal or external audits, such as in chemical, food, cosmetics or automobile parts manufacturing. With GWP® services and products, METTLER TOLEDO provides

consistent weighing accuracy, audit readiness and feasible cost efficiency. Furthermore, all GWP® services and products are designed for Swiss precision and quality requirements and developed to work globally in all markets.

Lifecycle Management according to GWP®

**With GWP® products and services,
METTLER TOLEDO provides:**
- Consistent weighing accuracy
- Audit readiness
- Feasible cost efficiency

Contact your local METTLER TOLEDO GWP®
consultant today or visit us at:

▶ **www.mt.com/gwp**

You can also download your free
Standard Operating Procedures (SOPs)
for Scale Straightforward Testing on:

▶ **www.mt.com/gwp-sop-ind**

System Integration
and Connectivity

Automation

Using our collaboration with the world-leading suppliers of PLC, process control systems and enterprise software, you can be assured that there is no easier way to integrate weighing technology into a modern process management environment.

Connectivity

Our terminals and instruments are professional communicators. METTLER TOLEDO can provide you with a wide variety of data interfaces to enable you to communicate with your PLCs, MES or ERP systems.

Global Reach

Wherever you install your equipment, there is a strong chance that METTLER TOLEDO is already there. We serve customers worldwide with the largest network in our industry. Our sales and service organizations around the globe ensure we have factory-trained, experienced and highly qualified specialists adding value to your processes.

Open System Weighing Terminals

If a METTLER TOLEDO product does not provide functionality "out of the box," we can provide either freely programmable weighing terminals or a solution programmed to the exact functionality requested for a given customer or integrator partner.

Be Compliant

Many weighing systems require approvals by local and international authorities. METTLER TOLEDO offers you the broadest range of worldwide approved weighing equipment and accessories. You can also benefit from the largest range of approved hazardous area (Ex) weighing solutions (please see "Hazardous Area Catalog").

Software and Validation

Because weighing plays a significant role in the security, safety and traceability of consumer products, such as food, cosmetics, pharmaceuticals and biological products, we offer services to select the most accurate solution for a given process and can support our measuring solutions to the required validation standards.

MES / ERP

Formulation / Recipe

Courtesy Beiersdorf AG

Inventory Control

Process Control

Batching / Blending

Filling / Dosing

www.mt.com/ind-process-weighing

Weighing Solutions
for the OEM and System Integrator

Off the shelf …
Our weighing solutions are well known for reliable and accurate operation. With METTLER TOLEDO as your OEM and integration partner, you will have access to

the best weighing technology, solutions and support available in the world. You can choose from a wide variety of load cells, sensors and terminals that are proven around the globe.

… or customer specific
Tap into the industry's best research and development team to build a weighing solution tailored to your exact needs. We can solve customer problems by developing innovative technologies. These technologies provide precision control through accurate weighing and measuring. We not only offer solutions, but also a global service network for local support.

With METTLER TOLEDO
from "Start to Finish"

DIMENSIONS IN INCHES [mm]

Testing

No weighing solution is complete without testing. METTLER TOLEDO has the broadest testing capability for weighing solutions in the world. You can have the confidence that our components will help your customer make a great product with your equipment, not just a good one.

Direct Connectivity

METTLER TOLEDO solutions collect process and transactional data and facilitate the processing and transfer to management information systems. Protocols supported include: TCP/IP, Control-Net™, Ethernet IP™, DeviceNet, CC-Link, ProfiNet, PROFIBUS® DP, Modbus TCP, Allen-Bradley® RIO, 4–20 mA/0–10 V, RS422/485, RS232 and discrete digital I/O.

World-Class Manufacturing

Our state-of-the-art facilities and distribution hubs are located on three different continents. They build your weighing components and deliver them according to your schedule. To ensure quality and a safe environment, all of our operating units are certified to international quality and environmental standards.
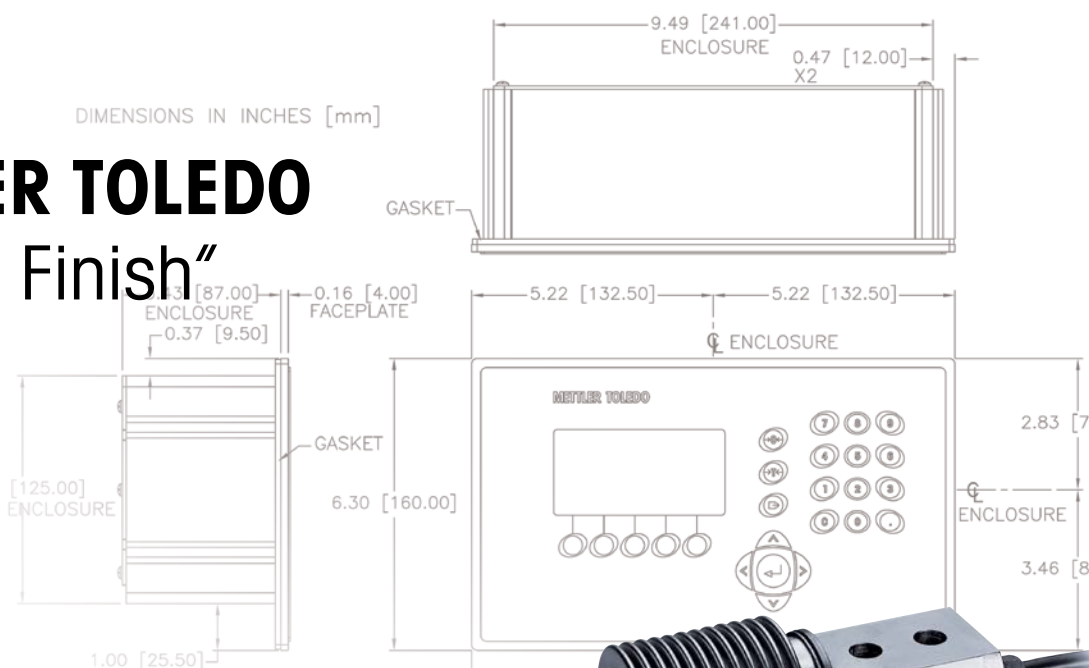
Engineering Support

Our engineering professionals design and integrate OEM components and systems directly into your product according to your specifications. From planning through design and testing and agency approval, METTLER TOLEDO is with you all the way.

Electronic Solutions

We provide all the necessary electronics and software to facilitate fast, accurate and reliable integration with your product. Our instruments and application specific software integrate easily into IT environments, enhancing safety and efficiency as well as guaranteeing compliance.
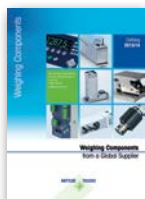
For more details please order our catalog "Weighing Components from a Global Supplier" at **www.mt.com/weighing-component-catalog**

www.mt.com/weigh-modules

Competence for Safety
The Right Solution for Hazardous Areas

Explosive areas require special consideration, but performance need not be compromised. Our complete range of solutions for weighing in hazardous areas helps optimize operations, accelerate processes, improve product quality and comply with the latest regulations.

Only equipment compliant with hazardous-area regulations provides sufficient protection against explosion risk. However, some safety concepts can influence weighing performance. METTLER TOLEDO develops weighing equipment for use in hazardous areas, which combine excellent safety with uncompromised weighing performance.

Our extensive range of intrinsically safe terminals provides high-speed process control for automated processes as well as multiple scale connectivity and ERP integration for manual or semi-automatic processes. Choose from a range of compact, bench, floor and custom scales as well as load cells and vehicle scales. Our products are powered with specially designed power supplies and they also offer the flexibility of mobile battery-powered operation.

We serve global customers with the largest sales and service network in the industry. Our factory-trained, experienced and dedicated specialists provide tailored solutions to match our customers' requirements and comply with regulations.

Download a free guide
The Competence for Hazardous-Area Safety guide provides you with information about:
- Explosion Protection Basics
- Standards and Regulations
- Hazardous-Area Classification
- Protection Types
- Installation and Maintenance
- Weighing in Hazardous Areas

▶ **www.mt.com/ind-hazguide**

Courtesy Clariant

Catalog:
Weighing and Process Solutions for Hazardous Areas

The catalog for hazardous-area solutions provides a comprehensive overview of the product range METTLER TOLEDO has developed to meet the highest safety and performance requirements in potentially explosive environments. In addition, it features valuable information on hazardous-area regulations and classifications.

Download a free catalog

▶ **www.mt.com/ind-hazcat**
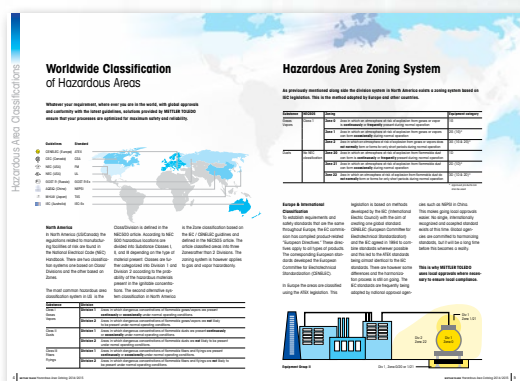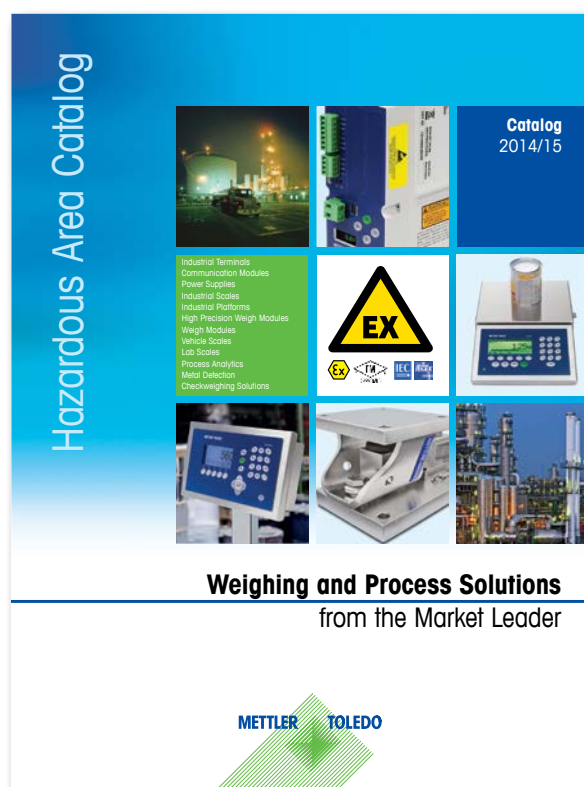
▲ **www.mt.com/hazardous-area**

Service & Support

METTLER TOLEDO Service
The Market Leader at Your Service

Your measurement equipment, systems and software are vital in ensuring that you meet production and financial goals while satisfying each customer's requirements. Meanwhile, you participate in increasingly more regulated markets and compliance is mandatory. Plus, you must stay ahead of competitors through innovative processes and superior products.

Four Values, Satisfying your Service Needs

METTLER TOLEDO understands these tough challenges and the resulting service and support requirements of our customers. We satisfy your expectations and needs with profound know-how and a comprehensive service offering, focusing on the following four key values, which are highly relevant in every manufacturing situation around the world, including yours.

Uptime
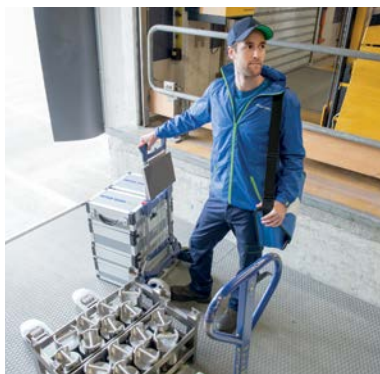
Easy access to support know-how, expert on-site or depot repair and remote equipment monitoring ensure maximum uptime.

Your production equipment is often subjected to harsh environments and high-utilization in critical processes, requiring every minute of uptime. Defend against equipment breakdown, parts failure, and "wear and tear."

Performance

Professional installation, setup and optimization of your equipment, combined with proven applications guarantee performance from day one.

Regular preventative maintenance according to manufacturer's procedures ensures efficient and consistent performance throughout the life of your equipment, preventing out-of-specification results at all times.

Compliance

Full compliance with your industries' regulatory norms and legal requirements is a must, delivering secure audits and providing peace of mind.

Take advantage of our comprehensive equipment qualification and calibration packages, combining documentation and certification with recommendations for maintenance and routine testing specific to your application.

METTLER TOLEDO Service

Expertise

Your know-how paired with the expertise of our Service Team is key to maximum uptime, optimum performance and 100% compliance.

Benefit from our large portfolio of proven applications, white papers, SOPs and technical documentation. In our tailored trainings and seminars, your personnel acquire the knowledge and skills to operate with maximum efficiency.

Uptime
Support and Repair

- On-site and Depot Repair
- Spare Parts
- Wear Parts
- Support
- Remote Diagnostics

Performance
Maintenance and Optimization

- Installation
- Preventative Maintenance
- Configuration
- Refurbishments
- Upgrades
- Software Maintenance

Compliance
Calibration and Quality

- Certificates
- Equipment Qualification
- Software Validation
- GWP Verification

Expertise
Training and Consulting

- User Training
- Maintenance Training
- Business Support
- Application Consulting
- Project Management

▲ **www.mt.com/service**

Accurate Measuring through GWP®
The Global Weighing Standard

Good Weighing Practice™ (GWP®) is the science-based global weighing standard for the efficient life-cycle management of weighing systems. The risk-based approach allows you to improve control of your whole measuring process, which in turn helps to avoid costly out of specification results.

Benchmark Your Quality Management System

GWP® Verification helps you ensure accurate weighing results as part of your quality management system. Applicable for all balances and scales, it provides an optimized testing and calibrating scheme, which may translate to sustainable time and cost savings.
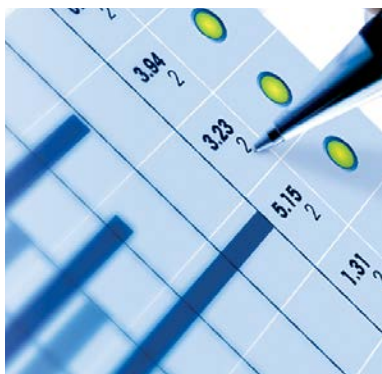
Reproducible Accuracy

The GWP® Verification documentation provides all necessary information on testing procedures, frequencies, weights and pass/fail tolerances. This allows you to maintain reliable weighing accuracy over the lifetime of your weighing equipment.

Feasible Cost Savings

Optimized routine testing based on your risk management ensures consistently good quality in critical applications. Additionally, a sound testing scheme saves costs by eliminating unnecessary tests in lower-risk processes.

Audit-Proof Documentation

The GWP® Verification summary report contains the assessment of all weighing equipment in one audit-proof document. Color codes indicate where requirements have not been met and cost savings can be achieved. You will receive clear recommendations on how to eliminate any gaps and improve overall quality under operating conditions.

For your success: you focus on your process; we take care of the measurement.

Your Benefits

- The accuracy of your weighing instruments is matched to your process tolerances.
- A comprehensive summary report provides an overview of the status of all weighing equipment.
- An optimized routine testing and calibration schedule results in sustainable cost savings.
- Audit-proof and up-to-date documentation complements your quality management system.

Latest GWP® Solution

GWP® Recommendation for Counting

Selecting the right counting solution saves money and provides peace of mind from the start. The GWP® Recommendation for Counting is a unique qualification service to determine the right counting solution for any specific process requirement.

Maximize
Uptime and Performance

METTLER TOLEDO offers a comprehensive portfolio of services to protect the value of your measurement equipment and to ensure results that meet production requirements. Professional installation gets your process running faster and consistent with specifications. Preventive maintenance is an exceptional investment with long-term benefits of increased equipment life, minimal downtime costs and operational readiness. Accuracy can only be achieved by means of a professional calibration, with results documented in a high-quality, comprehensive calibration certificate.
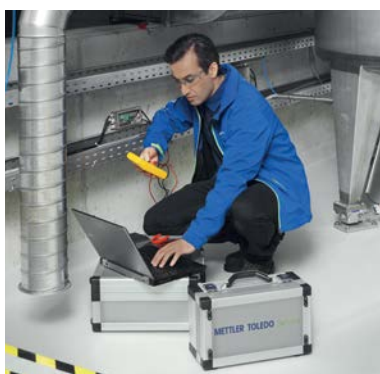
On-time and on-spec beginnings with ease

Perfectly set up your measurement equipment or system with installation, integration, configuration, calibration, and user training using factory procedures. Ensure productivity and accuracy from the first day.

Smooth routine operation guaranteed

Scheduled preventative maintenance and calibration performed by factory-trained and authorized service technicians are key to ensuring smooth routine operation, gaining maximized productivity and achieving reliable weighing accuracy.
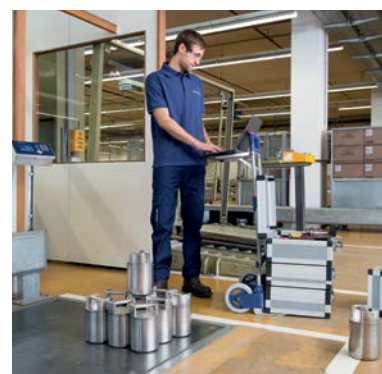
Minimum weight to stay on the safe side of weighing

As the amount weighed decreases, the relative measurement uncertainty of a scale increases. In order to ensure dependable weighing results, it is essential to document the smallest weight, which can be reliably weighed on a minimum weight certificate.

Preventive Maintenance and Calibration

- Proactively planned preventive maintenance helps to control operating costs – money well invested to eliminate premature equipment replacement or unplanned downtime.

- Preventive maintenance, including calibration, gives rise to accurate, reliable and consistent results, avoiding waste, rework or even product recalls.

Your Benefits

Uptime

- Control of your budget through periodically scheduled maintenance

- Increased life expectancy of equipment assets

- Ensured performance of equipment with preemptive adjustment and repairs

- Avoid costly disruptions of production processes

Performance

- Improved process output and less waste

- Increased operator efficiency and safety

- Traceable weights leading to traceable results

- Measurement uncertainty guarantees that process tolerances are met

- Minimum weight determination ensures consistently accurate weighing results

Profound Know-How
to Ensure Regulatory Compliance

Chemical, food & beverage, pharmaceutical and biotechnology companies are increasingly required to satisfy equipment qualification requirements. METTLER TOLEDO has designed and executes IPac to satisfy the qualification demands of regulatory authorities, such as the FDA, for all weighing instruments in use in production and quality control.

Your Benefits

Compliance

- Eliminated or reduced risk of non-compliance during regulatory audits

- Improved operational efficiency through quick installation and start-up

- Specified quality of products and reduced liability during routine operation

- Reduced operator error through improved adherence to SOPs

Expertise

- Professional risk management, no warning letters or fines ensures credibility and competitive advantage
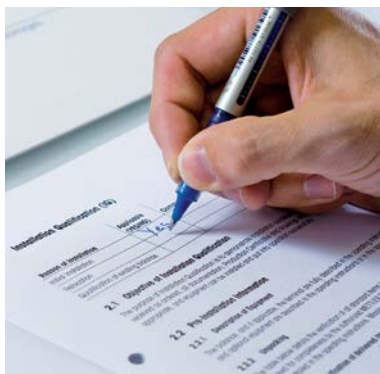
IQ – Installation Qualification

A professionally documented installation by an authorized service technician results in immediate availability of your weighing equipment

OQ – Operational Qualification

Get accurate results from the first weighing by ensuring that equipment will function according to its operational specifications in the selected environment.

PQ – Performance Qualification

User SOP's are set up to make sure that your equipment consistently performs according to a specification appropriate for its routine operation.

Calibration and Certification
for Compliance and Beyond

Consistent global procedures, readily available documentation and valuable data let you manage performance beyond the next audit. You profit from METTLER TOLEDO calibration services with professional certificates for industrial weighing equipment. Our certificates ensure full compliance with regulatory and industry standards and prove your results are accurate and precise. Have confidence that your scales perform to specification – and that your auditor knows it too.

The MiraCal™ Advantage

MiraCal™, the proprietary calibration and certification system used by METTLER TOLEDO, provides total consistency by guiding our service technicians through globally-applicable standard operating procedures. It provides full traceability of your certificates and paperless delivery, significantly advancing your efforts towards achieving a more sustainable working environment.

Procedural Consistency

Preset calibration workflows guarantee audit-proof testing procedures consistently executed by all technicians across all countries and industries.

Electronic Flexibility

Certificates are administered in PDF format allowing environmentally sound, paperless archival and retrieval at any time, safely stored on your computers and archived on our secure backup.

Quality Assurance

Computer automation eliminates human errors in the application of correct standards, calculation of tolerances, and generation of easy-to-read certificates that are fully traceable.

Software
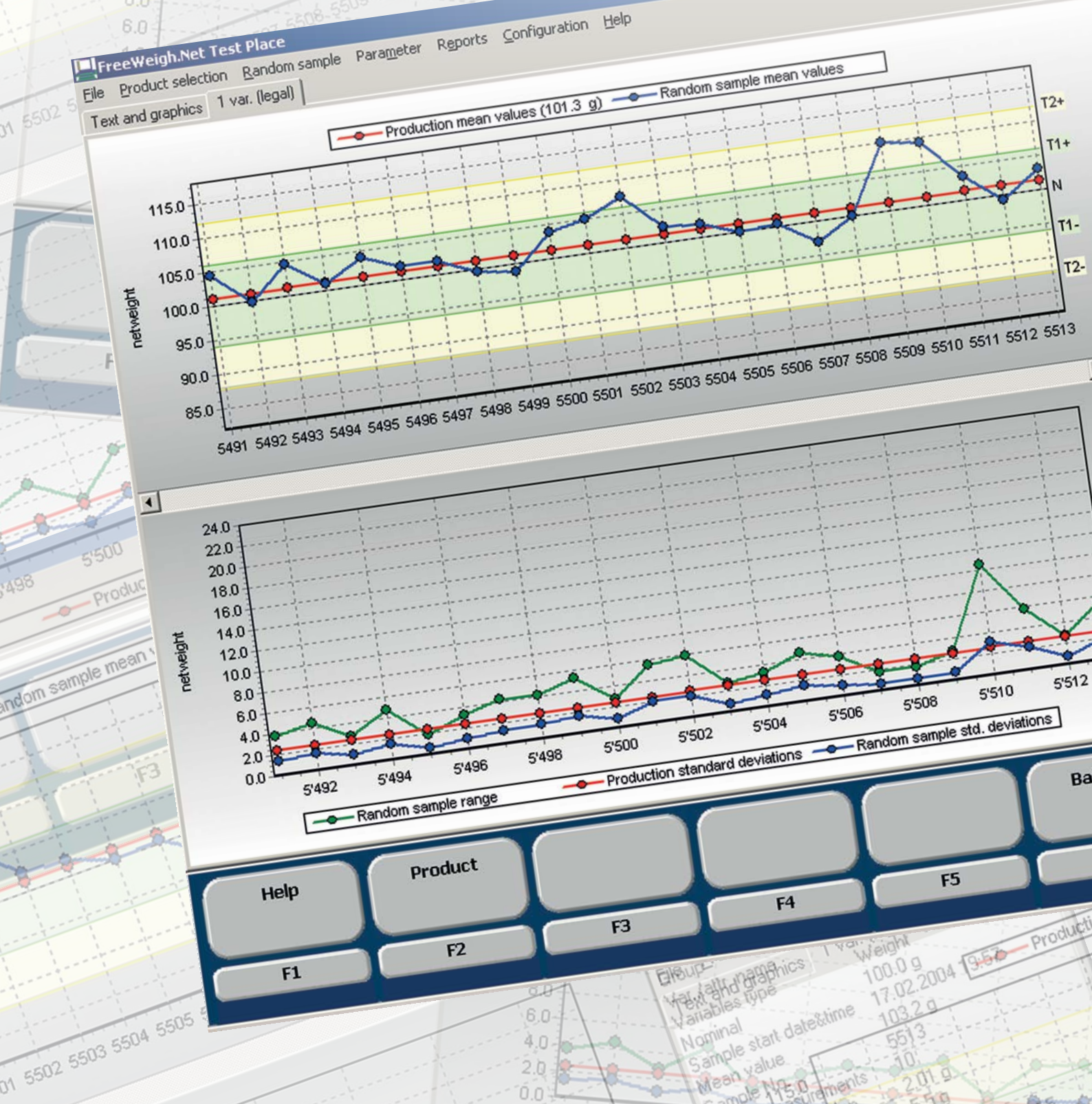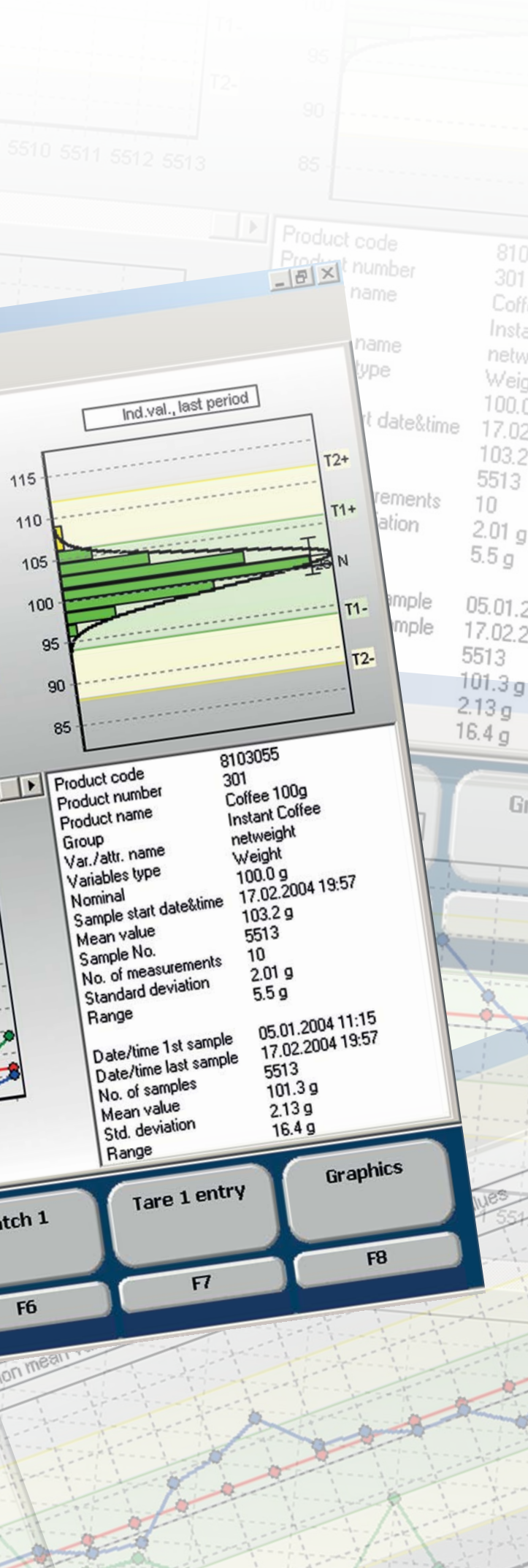
Ind.val., last period

Product code	8103055
Product number	301
Product name	Coffee 100g
Group	Instant Coffee
Var./attr. name	netweight
Variables type	Weight
Nominal	100.0 g
Sample start date&time	17.02.2004 19:57
Mean value	103.2 g
Sample No.	5513
No. of measurements	10
Standard deviation	2.01 g
Range	5.5 g
Date/time 1st sample	05.01.2004 11:15
Date/time last sample	17.02.2004 19:57
No. of samples	5513
Mean value	101.3 g
Std. deviation	2.13 g
Range	16.4 g

Graphics

Tare 1 entry

tch 1

F8

F7

F6

Networked Quality Assurance
Beyond Filling Control!

The networked quality assurance system with virtually no limits in expandability: Statistical Quality Control (SQC) with FreeWeigh.Net® is easy to use, allowing systematic acquisition of quality data, statistics analysis, documentation and monitoring in a networked and factory-wide quality assurance system.

This flexible and highly configurable PC-based software system provides powerful functions for data acquisition thanks to the vast range of connectable devices and input possibilities. This makes SQC a method far beyond weighing, as it enhances data collection and analysis to almost any physical parameter and results from visual product inspection, such as correct "best before date," appearance or proper packing.

The basic license provides a full set of features allowing thorough quality control. Optional modules and connectivity drivers allow gradual expansion and enhancement of the system as it is needed. The scaleability of the software permits tailor made solutions

without having to spend money and time for special software development, guaranteeing maximum return on investment and long term value of the system.

Functionality
- Audit Trail/21 CFR Part 11
- Batch handling
- Picture-based attributes and testplans
- Multihead filling
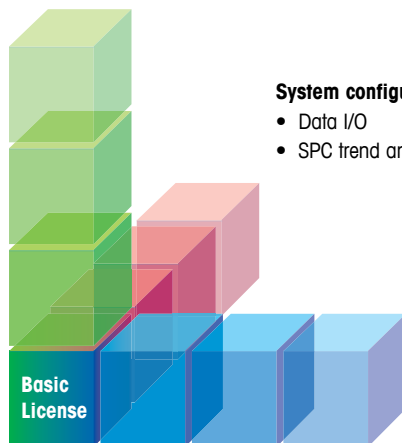
System configuration
- Data I/O
- SPC trend analysis

Connectivity
- Balance/scale
- Checkweigher
- Metal detector
- Digital I/O

Basic License

Don't Miss Anything When it Comes to Quality

Compliance with legal net content requirements and optimized fill quantity are important cornerstones of successful production. With FreeWeigh.Net® you are able to go far beyond, as it enables you to enhance your quality control to thorough product inspection including aspects like product expiry date, proper

package seals, correct labeling and the HACCP sensitive check for metallic contamination. With FreeWeigh.Net®, nothing is left out and the products leave your factory in a constant and traceable quality, ensuring consumer satisfaction and safety.

Cap torque OK?

Fill level OK?

Label OK?

Expiry date OK?

Batch/lot ID OK?
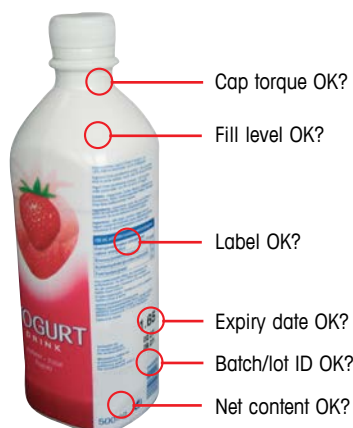
Net content OK?

Net content

Expiry date
Batch/lot identification
Package appearance
Package insert included

Tablet appearance (surface, embossment, color, etc.)
Single and mean weight, thickness, diameter, hardness, friability, disintegration, dissolution

Picture courtesy Schering

858140   NDC 0026-8581-69
AVELOX™
(moxifloxacin hydrochloride)
Equivalent to
400 mg moxifloxacin
30 Tablets
℞ Only

Remote weighing station   Monitoring   Planning
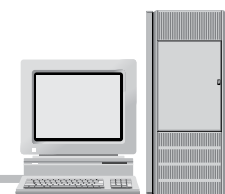
MS SQL server

Remote weighing station   Checkweigher   Metal detection   Testplace module with weighing station, tablet tester and dimension measurement

Improve Your Process and Save Money

Potential savings in production are countless. Having a process optimized to the limits of fill quantity guarantees compliance with legal requirements and reduces overfill to the absolute minimum.

Manual reporting is a time-consuming and error-prone task. Having the measurement data on paper and transferring it to a spreadsheet can take hours when sampling pace is fast. FreeWeigh.Net® streamlines the process of data acquisition and makes the rest simple for you without any need of manual action exactly at the moment you want with the advanced reporting functionality. The user interface of FreeWeigh.Net® is designed for easy, efficient and convenient data acquisition. Training costs for the users are low, and optional test plans ensure that no data is left out.

Updated statistics are immediately available on all stations after the sample was taken. Online alarms advise when processes are out-of-specification.

This gives you the possibility to intervene while the production is running and to save a batch from rework and avoid having to scrap it. As all data is stored on the central SQL database, it only needs a mouse click to retrieve historical production data for assessment or documented evidence for customers or government authorities.

FreeWeigh.Net® at a Glance
- Significant reduction of product overfill cost
- Compliance to legal fill requirements
- Standardized and simplified processes
- Online monitoring and alarming
- Short reaction time in production
- Process trending with SPC
- Picture-based quality assessment
- Automated reporting
- Scalable system implementation and enhancement
- 21 CFR Part 11 compliance functionality
- Validation for regulated environments possible
- Fast ROI

FreeWeigh.Net® Compact
Get Ready to Grow

If you only need one SQC/SPC station, but don't want to forgo the convenience and opportunities offered by a PC-based system, FreeWeigh.Net® Compact is the right solution.

FreeWeigh.Net® Compact is a fully equipped SQC system for a single station, but expandable with optional modules like the networked brother system.

If distributed data acquisition is needed later, METTLER TOLEDO offers an affordable upgrade package.

OIML

e

ISO certified

GMP

GLP

www.mt.com/freeweighnet
www.mt.com/sqc

SQC Stand-Alone Systems
Optimum Control at Minimum Cost

SQC stand alone systems are compact quality control solutions for fast and reliable filling control and statistics. They are "out of the box" quickly installed at the place they are needed, have a small foot print and are efficient in operation without the need for extensive trainings. Because the entire SQC intelligence and the article database are built-in they don't require any networking infrastructure or computers, which make them very flexible in operation.

The various models can manage from 16 to 100 different articles, which are defined ready for sampling in no time at all. Mandatory limits are covered by defaults and other tolerances can be defined manually. Sampling and statistics reports are instantly available in clearly readable reports printed on the connected printer.

If wished, they can be occasionally connected to a personal computer for data backup and archiving by means of the backup/restore software, which allows convenient data transfer and further handling of the collected data.

SQC14 – The SQC Printer

Models	SQC14/16, SQC14/60
	Printer with integrated SQC application and own keypad
Interfaces	RS232 and LocalCan
Applications	SQC or simple printing
Operation	Data entered on printer keypad and shown on balance display
Article memories	16 or 60
Special features	• Connection of large selection of balances • Operation with LV11 tablet feeder • Pharmaceutical tolerance system

LV11 – The Tablet Feeder

For automation of large sample sizes in the pharmaceutical industry

Interfaces: RS232, LocalCan

Accessories: Doors with opening for XS/XP analytical balances and for Pro draft shield of XS/XP precision balances

SQC-XP –
The SQC Software for XP Balances

Models	XP precision and analytical balances
Capacities	26 g – 64 kg
Readability	From 0.001 mg up to 1 g
Protection	Up to IP54* (*in use)
Display	Color touch screen display
Interfaces	Standard: 1× RS232 Option: add. RS232, LocalCan, Bluetooth
Accessories	Tablet feeder (LV11), printers, barcode reader, relay box (LC-I/O) and PC, backup/restore program (BRXP)
Applications	SQC, weighing, piece counting, percent weighing, density determination, statistics, formulation, dynamic weighing, differential weighing
Operation	Menu guided via touch screen display
Languages	German, English, French, Italian and Spanish
Article memories	100
Users	8 different users, individually configurable access rights
Special features	• Program for installing on any XP balance • 2nd tolerance system for export • Shared statistics for multiple articles • Global density groups • Warnings and adjustment instructions • Pharmaceutical tolerance system • Operation with LV11 tablet feeder • PC data backup and article configuration • Support for A4 printer

FormWeigh.Net®

Speed and Reliability
for Perfect Mixtures

Would you like to get your formulation processes completely under control and avoid wasting valuable raw materials?

FormWeigh.Net® is the answer. This solution from METTLER TOLEDO combines powerful formulation software with reliable weighing technology and leading-edge IT for optimal process control. It meets the stringent requirements of the pharmaceutical industry while effectively supporting the operator's daily routine. The speed achieved by FormWeigh.Net® without sacrificing reliability makes it suitable for a wide variety of industries. Whether used as a standalone weighing station or an ERP integrated complete solution, its modularity offers highly flexible expansion support and easy upgrading to the next level of functionality.

Incoming Goods

Weighing station 1

Weighing station 2

Functionality
- Batch control
- 21 CFR Part11/111
- Active ingredients
- Warehouse

System configuration
- Master data management
- Incoming Goods
- Shipment
- Weighing station
- Production station

Integration
- SAP
- Warehouse
- Database
- ASCII

Basic
License

Mix it up without getting mixed up
To start with, simple and intuitive prompts guide the operator through the weigh-in process step by step. And then FormWeigh.Net® automatically checks the individual entries against preset criteria to ensure, for example, that the raw material is correct or its batch still in date. If the weighing order contains an active ingredient, the necessary correction to achieve the target weight is automatically calculated for the batch being used. During the actual weighing process only weight values within tolerance can be transferred. If too much of one ingredient has been weighed in at any stage, linear correction can be applied to the others to guarantee reproducible high quality.

Standard Software for individual Needs

The modularity of FormWeigh.Net® caters to your individual needs. The versatility of this METTLER TOLEDO product, which is achieved through a combination of a whole series of carefully matched function modules, has major advantages in meeting stringent quality specifications in diverse production environments.

FormWeigh.Net® works alongside your processes and documents them electronically on the centralized database without compromising your flexibility. FormWeigh.Net® allows you to take control of your workflows in such a way that you are always aware of which orders are completed, in progress or awaiting processing.

Master data management

Weighing station 3

Production

Integration into ERP Systems

The ERP gateway for FormWeigh.Net® allows simple, automatic exchanging of data between FormWeigh.Net® and the production planning function of a host or ERP system. The data can be exchanged via the SAP interface or by means of ASCII file transfer or database synchronization.

To eliminate potential entry mistakes, the order data, parts lists and inventory information can be transferred from the production planning system to the weighing system and the consumption data reported back.

Tracking

Tracing

FormWeigh.Net® offers:

- Graphical support to avoid incorrect mixtures
- Prevention of material wastage
- Right mixture reliably documented
- 21 CFR Part 11/111 readiness
- Automatic calculation of active ingredients
- Acquisition and verification of batch information
- Clear, concise representation of the weighing process
- Maximum process reliability
- Seamless traceability
- Validation support
- Automatic dosing
- Fast ROI (<12 months)

www.mt.com/formweighnet
www.mt.com/formulation

IND780 Q.iMPACT™
Fast & Accurate Material Transfer Control

**Eliminate the trade-off between accuracy and throughput;
optimize both with patented adaptive predictive Q.iMPACT control**

Material Transfer Control Strategy
Q.i
METTLER TOLEDO

Success in the increasingly competitive manufacturing business takes more than the latest technology or equipment. For manufacturing facilities that use batching, blending or filling processes, insist on Q.i.

Q.i is an innovative material feed measurement and cut-off system engineered to increase process efficiencies, reduce manufacturing costs and generate profit.

At the heart of Q.i is a set of patented feed forward Predictive Adaptive Control algorithms, exclusive to METTLER TOLEDO. These self tuning algorithms build a real-time mathematical model for each material transfer.

They then automatically learn and compensate for natural process variation and predict the precise adjustment required to yield the most accurate cutoff for each material transfer.

Thanks to these advanced controls, complex, multi-speed systems are unnecessary. Q.i's single-speed feed control provides fast and accurate control of virtually any material including

• Granules
• Powders
• Liquids
• Slurries

Working alone or integrated with popular PLC/DCS platforms, Q.i controls the cutoff of simultaneous scales, load-cell systems and flow-meter measurements.

Patented predictive-adaptive feed control

Overlapping feed management

Flow alarm management

Historic spill control

Estimated time to complete feed

Scales and load cell systems

Flow meters

Pre-feed, post-feed condition checking

PLC/DCS digital connectivity

Q.i pyramid

www.mt.com/batching
www.mt.com/filling
www.mt.com/qi

46 METTLER TOLEDO Industrial Catalog 2015
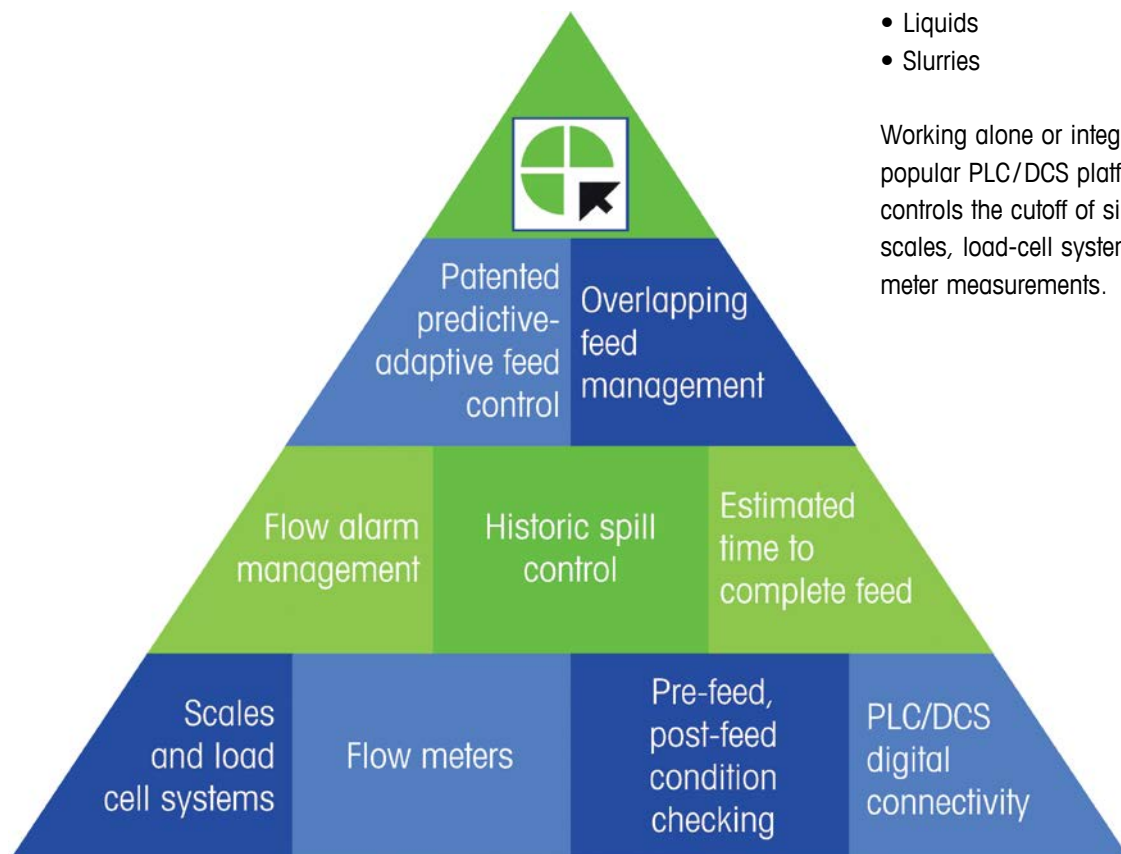
More Time and Profit in Production

Q.iMPACT®
Material Transfer Controller

The world's most advanced material transfer (feed) controller. Optimize your batch, blending and filling-control operations. The Q.iMPACT system leverages the flexibility, features and functions of the IND780 terminal. A robust, second-generation set of 21 embedded material feed functions enhances and expands the terminal's capability. The IND780 Q.I terminal is the ideal solution for End Users, System Integrators and OEMs.

Scales and flow meters	Process measurement tools include digital scales, analog scales, load cell systems and flow meters, with concurrent monitoring and control
Multiple measurement tools per Q.i 780 terminal	In each terminal, six option board slots support up to four analog scales, one multi-scale POWERCELL® PDX® interface, four IDNet/digiNet, twelve flow meters, or a combination of these
Q.i 780 clustering	Up to 198 total measurement tools in 20 Q.i 780 terminals, clustered via Ethernet LAN
Fieldbus communication	EtherNet/IP™, Profibus® DP and ControlNet™ for full fieldbus integration; A-B RIO, DeviceNet™ and Modbus TCP for limited functionality; 2-channel, 4–20 mA analog output; two modes of host communication – classic or enhanced, user-selectable and configurable
Predictive Adaptive Control	Up to 12 licenses per terminal, with up to 198 pooled licenses per cluster
Material Paths	Up to 999 per single terminal or cluster
Programming	TaskExpert™, standard with Q.iMPACT, supports function block programming
Display	TFT color graphical LCD display with backlight
Keypad	0–9 numeric keys, decimal point, clear, tare, print, zero, select scale, four application-specific softkeys, five scale function softkeys, navigation arrow keys, enter key
Target Cutoff Comparison Rate	Analog load cell interface: 91.5 Hz; flow meter interface: >200 Hz; IDNet, SICS, Modulo and POWERCELL® PDX®: Rate depends on cell type and model
Flow meter interface	Supports any flow meter with calibrated digital pulse output signal up to 24 V DC / 150 V AC and 1–50 KHz frequency range
Enclosure	Panel mount: 220×320×105 mm, stainless steel front panel, certified Type 4×/12 environmental rating; Harsh Environment/Desk/Wall mount: 200×299×245 mm, stainless steel, IP69k certified
Communication ports	One RS232; one RS232/422/485; up to two additional RS232 port expansion cards; one TCP/IP 10/100 Base-T Ethernet; USB master for external keyboard or external memory
Digital I/O Options	Discrete I/O: Maximum of 40 inputs, 56 outputs; local (Relay or Solid State): One or two modules, each with 4 inputs, external sink 5–30 V DC; 4 outputs @ 30 V AC/V DC, 1 A max.; Remote: Up to 8 ARM100 I/O modules, 4 in/6 out @ 60 V DC / 250 V AC, 1 A max.

▲ www.mt.com/qi

InSite® SL

Indispensable Utility
for Back-up and Restore

**An easy-to-use and flexible application for saving
and restoring your terminal configuration files**

The **InSite® SL** application is used to manage
industrial terminal configuration and data files. This
indispensable utility can save and restore setup
parameters to and from a PC, for the IND and ICS
terminals listed below.

As the sample screen at right shows, any combination
of configuration, log and table files can be selected for
saving to PC.

When loading a saved configuration file from PC to a
terminal, the utility allows four types of match check-
ing to ensure trouble-free writing of configuration data.
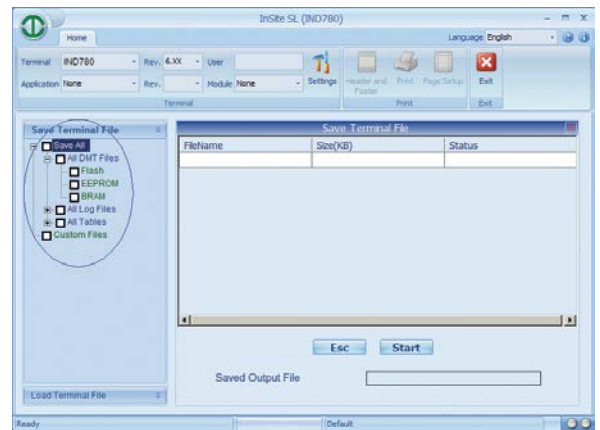
As this IND780 example shows, **InSite® SL** supports the selection of
specific configuration and data files when saving
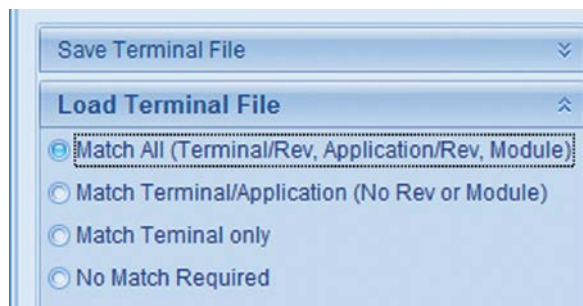
InSite® SL is PC-based and compatible with
Windows XP, Windows 7 and Windows 8. It is used
to save the values of various terminal setup param-
eters and table data, and to restore the setup param-
eters at a later date. It can also be used to speed up
installations by duplicating configurations from one
terminal to others.

InSite® SL supports a wide range of METTLER TOLEDO terminals and connection types.
Terminals and their respective supported connection types are shown in the table below.

Models	Connection Type		
	Serial	USB	Ethernet
ICS429, ICS439, ICS449, ICS469, ICS689 ICS425, ICS435, ICS445, ICS465; ICS685 IND130, IND131, IND331, IND226, IND231, IND236	•	-	-
IND135	•	•	-
IND231/236	•	•	-
IND246, IND246 POWERCELL	•	•	•
IND560, IND560x, IND560 PDX, IND560fill	•	-	•
IND780, IND780drive, IND780batch IND890	-	-	•

DataBridge™

Control and Accuracy
to Keep them Rolling

DataBridge™ software saves time and money by giving you complete control of your vehicle-weighing operation.

DataBridge™ software processes transactions quickly and accurately to keep traffic moving over your vehicle scales. DataBridge™ SS software is an entry-level product for controlling one or two scales. DataBridge™ MS software is a powerful solution that controls more scales, provides greater security and offers enhanced tracking.

DataBridge™ MS Capabilities

- Controls up to six scales plus traffic lights and gates
- Easy-to-use operator screen with touch-screen capability
- Microsoft SQL Server database for storing transaction data
- Presets speed up transactions by entering data automatically
- Pricing by material, customer or contract
- Transactions by weight or volume
- Full-length, multi-axle and split weighing
- Standard reports and tickets
- Easy-to-use data import/export
- Password-protected security for all tasks
- Ability to store compliance documents for tracking
- Optional unattended module
- Optional credit card module

WeighSync™

Integrate Weighing Terminal Data
Into Your Manufacturing Operations

WeighSync™ Software for Scale Integration into PC-based Applications

WeighSync is a software application that allows data from individual weighing transactions, or from stored table data, to be transferred automatically from a weighing terminal to a central database, using an Ethernet or serial connection. The transfer of weighing data to the WeighSync database can be carried out automatically in real time, initiated manually, or set to occur according to a schedule.

Simple Connection to Devices

Pre-defined templates enable quick connection to a broad variety of METTLER TOLEDO industrial weighing terminals. Simply select the terminal's template from a drop-down menu.

Flexible Configuration
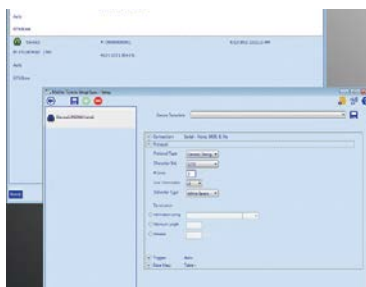
Custom configuration parameters provide the flexibility to define custom data structures, which can be parsed and mapped to user-defined fields and tables in the Microsoft® SQL Server Express database.

Ready for Existing Processes, Scalable for Future Growth

The WeighSync network can use a serial connection to communicate with an older generation of terminals, but is also ready to take advantage of newer, Ethernet-enabled products. If PC hardware changes, the WeighSync software can be transferred easily from one PC to another by moving the USB licence key device.

PC Workstation

A4 Printer

Ethernet
Network

IND780 Terminals with attached
weighing platforms, scanners and printers

Barcode
Scanner

Label Printer
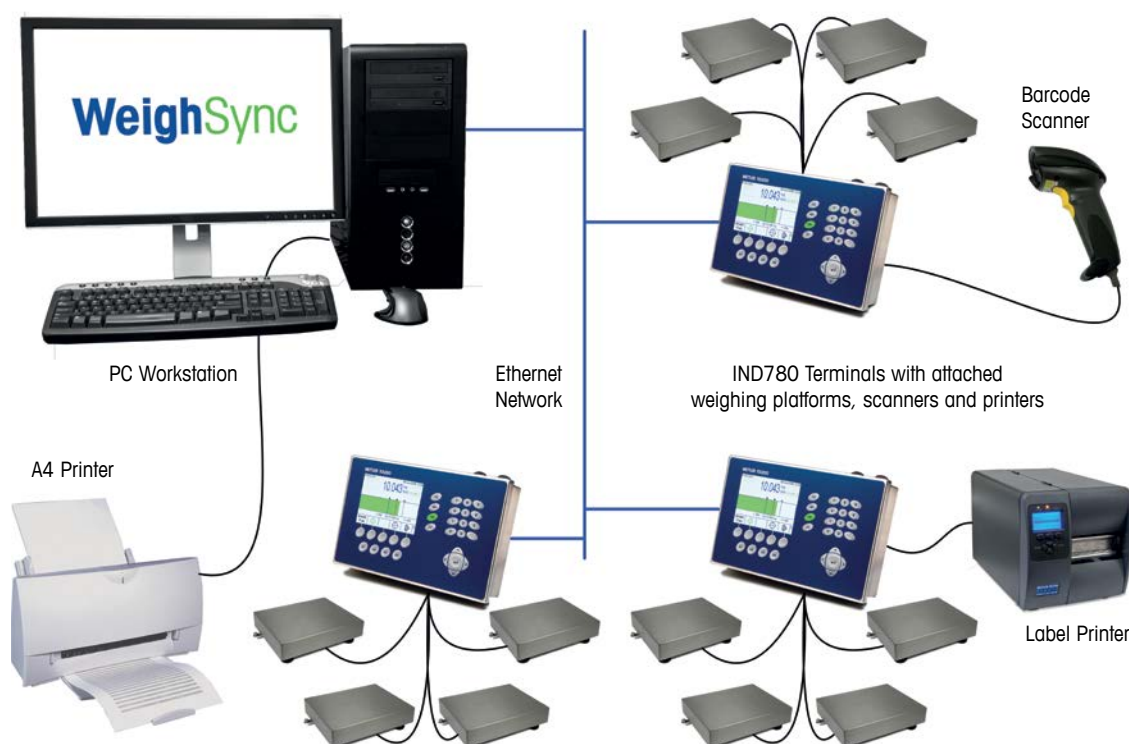
Data Reporting

Use collected data to create reports
with tables and graphs for use in
MS Excel or other programs or to
use for tracking and tracing.

WeighSync™ DC
Flexible data integration application for weighing terminals

Technical Data and Specifications

Order Number	30092997
Connectivity	Limited only by hardware performance requirements
Supported Devices	Connects to METTLER TOLEDO industrial weighing terminals, as well as laboratory scales and non-METTLER TOLEDO products, via the custom configuration interface
Data Types	Weighing terminal demand print data and standard METTLER TOLEDO industrial weighing terminal data tables
Data Viewing	Live data transfer monitoring via viewing of multiple devices; detailed view of collected data per device
Data Mapping	Up to 999 per single terminal or cluster. Ability to specify the number of data fields, length of each field, data type and characters to remove from the incoming data string, in order to match the desired database format
Search Functionality	Supports search of transaction data by device name and serial number, data range and data type
Data Reporting	Simple table reports are available to view and print, including entire table or filtered by search parameters. Data can also be exported in .csv format
Diagnostics	Status of live device connection indicated by color-coded icons; diagnostic view available for troubleshooting device connection
System Requirements	Microsoft® Windows 7 or Windows 8 Operating System
Administration	Requires installation of Microsoft SQL Server Express on PC running the WeighSync application
Licensing	Via USB memory stick dongle. Dongle must remain connected to the PC running WeighSync. Server installation of WeighSync is not supported
Documentation	User's Guide included on USB memory stick and accessible via the application help quick launch button
Trial Period	30-day free trial via application download from **www.mt.com/IND-WeighSync**

▲ **www.mt.com/IND-WeighSync**

Industrial
Terminals

A Powerful Combination
The "Personal Weighing Computer"

Clear – efficient – universal. With its standard touchscreen, the operation of the IND890 is simple and reliable even in the harshest environments. The application terminal also sets new standards in highly complex weighing processes. It provides the perfect connection between PC and scale with powerful and reliable industrial quality.

Sharper display

The large displays using widescreen technology with 10" or 19" screen diagonals and a resolution of 1024 x 600 up to 1366 x 768 pixels ensure better and easier readability from virtually any viewing angle.

Key information at a glance

Depending on the configuration, all weighing data and weight values from up to 4 balances, plus the sum scale are displayed simultaneously in the large, clear, certified weight-value window. Here, the weight data can be displayed in parallel with other application data. This makes all data available at a glance. The scales can

Very easy: "touch it"! Increased efficiency, greatest possible flexibility, intuitive operation.

be quickly activated and switched via the softkeys and smartkeys. Values are inputted via the country-specific touchscreen keyboard.

Operator guidance

- Working with the IND890 is very easy thanks to the self-explanatory icons, which are also supported by text instructions.
- Settings can be made quickly and effectively no matter whether you have to adapt data from the connected balances or the interfaces used. Everything can be found in the respective submenu with a few touches of the screen.
- Every user is shown only the elements required for the task at hand.
- DeltaTrac uses the bar color to indicate quickly and easily whether the target weight has been reached or exceeded. This simplifies and accelerates processes.

A new world of weighing

- Different user profiles.
- Up to 4 balances can be calibrated – plus sum scale.
- Variable adaptability through settings for display, region (time zone), user, language, softkeys.
- Wide range of configuration options (e.g. interfaces).
- Numerous weighing options and standard functions, including:
  - DeltaTrac

  - Tare deduction
  - Setpoints
  - Identcodes
  - Dynamic weighing (animal weighing)
- Versatile options for evaluating the saved data (Alibi, tare, messages, target values, interfaces).
- Maintenance functions with diagnostic routines.
- Simple software updates.

IND890-Base – Standard application included

The multilingual IND890 base software is a universally applicable weighing and service program for basic weighing tasks. It is a comprehensive weighing solution for customers, but also provides support for calibration officers and METTLER TOLEDO service technicians.

IND890 and FreeWeigh.Net or FormWeigh.Net

The use of FreeWeigh.Net for statistical quality control and FormWeigh.Net for professional formulation processing has proven to be a particularly successful combination. These tools can be used with the IND890 directly in production.

IND890
PC Application Terminal

100% hygiene in harsh conditions

The IND890 stainless-steel terminal was developed for use in even the harshest of industrial environments. With IP66 and IP69k protection, it can be cleaned conveniently and in a time-saving manner using a high-pressure cleaner.

Flexible and ergonomic – quick and easy

The IND890-15/19 (the "larger" version of the IND890) consists of a slimline flat screen and a separate ELO box[1]. Both components are connected with a single cable. This ensures extremely flexible and ergonomic workplace layout. Furthermore, the convenient IND890-10 compact version is an all-in-one solution. It is small, compact and supplies real-time data thanks to Windows CE.

IND890-19 HMI

IND890 ELO box

IND890-10 Compact version

Resolution (approvable)	Depending on connected scale
Dimensions (H×W×D)	IND890-10-Desk: 259 x 320 x 241 mm IND890-10-Panel: 221 x 311 x 94 mm IND890-15/19 Desk: 353 x 490 x 301 mm IND890-15-Panel: 320 x 480 x 51 mm IND890-19 Panel: 320 x 480 x 68 mm IND890-Elo-Box1 or Elo-Box2: 254 x 132 x 400 mm
Display	Active color TFT-LCD displays: 10.2" with resolution 1024 x 600 and 15.4" with resolution 1280 x 800 and 19" with resolution 1366 x 768. A touch-screen is standard
Keypad	IND890-10 and IND890-15/19: Enclosed, smooth surface of durable polyester, scratch-resistant. IND890-15": Action point membrane keypad with tactile keystroke, numeric keypad, 4 cursor and 8 function keys as well as Windows- and weighing specific keys
Housing	Stainless steel
Protection	Completely IP69k for Desk and front for Panel version
Interfaces	Data interfaces: RS232, RS422, RS485, USB, Ethernet (standard). Weighing interfaces: IDNet, Analog, SICS
Applications	Weighing software with Deltatrac, Tara Compensation and Setpoints
Special features and functions	Standard weighing application included: universal weighing and service program with DeltaTrac for dispensing and fixed-value memory for tare values
Accessories	Serial interfaces: RS232, RS422/485, USB, 3x PC-COM-Ports RS232 (IND890-15 only) Mechanical accessories: Wall adapter, floor stand and panel mount version; GA46 thermal printer Electrical accessories: RAM memory modules, cables
Number of attachable platforms	4: IDNet, Analog, SICS Sum Scale

[1] ELO box: The electronics box, or ELO box for short, contains the entire PC hardware including interfaces.

▲ **www.mt.com/PC-based-Terminals**

Power and Performance
Advanced Weighing Applications

The new generation of applied weighing terminals:
- **Profit from technological leadership**
- **Benefit from flexibility without losing focus**
- **Optimize displayed information**
- **Improve speed and accuracy**
- **Minimize process time**
- **Minimize operating costs**

IP69k

Maximize Productivity
- The world's first weighing terminal using an embedded, CE-based operating system
- Minimize process time with the IND780 Multi Processor design, providing excellent A/D performance at 366 Hz including TraxDSP™
- Improve quality and consistency of products while reducing wasteTrax-DSP™ (adaptive digital filtering technology) minimizes effects of environmental noise. Internal target comparisons occur up to 50 times per second, helping to ensure fast, consistent delivery of material
- FTP-based file transfers, e-mail messaging of errors
- Standard or custom templates for various output formats help to ensure that requested data is available wherever needed
- Built-in SQL-CE database and TaskExpert allow flexible access to internally stored data
- Improve the speed and accuracy of manual or semi-automatic operations with SmartTrac™. This feature offers three display

modes to graphically show weight status to target
- Configurable graphic softkeys allow for single key-press operation of important features and functions
- Wide range of communication options: 10/100base-T Ethernet connectivity, serial ports and a built-in USB Master. Optional: additional serial ports and a wide range of PLC interfaces
- Maximize uptime through calibration management and testing, secure access to the configuration of the terminal, logs to help diagnose problems and errors, and email notification of specific events

Minimize operating costs
- PC-based terminal configuration backup and restore tool allows for secure configuration file back-up, as well as fast and simple duplication of configuration files to additional terminals.
- TaskExpert®, the graphical flowchart-based programming environment to develop customized applications

- Multi-lingual operator interface helps to guide operator through complex or varying operating sequences
- Use of icons reduce training efforts
- Flexible options allow to configure the weighing terminal for the respective application
- MinWeigh® functionality helps to make sure proper procedures are followed
- Select combinations of METTLER TOLEDO scale technologies: Analog, POWERCELL®, Advanced Precision Weighing, IDNet, SICS or X-bases
- Fieldbus connectivity using popular networking protocols: Profibus®, PROFINET, Modbus TCP, ControlNet™, EtherNet/IP™ and DeviceNet™
- Use TraxEMT™ Embedded Maintenance Technician as a preventative strategy to predict and plan scale maintenance rather than having to react after a scale is already down

Manual or automated weighing applications? The IND780 is well equipped for both.

Transaction
- Multiple platform weighing including tare data and metrological sum all on one display
- Transmission of up to 10 output templates to printers or through Serial/Ethernet data protocols to other devices
- Manual filling or adding of ingredients using one of three SmartTrac™ graphical displays

Courtesy Altana

- Validated precision weighing with programmable MinWeigh® minimum weight threshold
- Drive-780 vehicle application offers expanded tables, traffic light/gate control and the ability to integrate target control and vehicle weighing on one platform

Process

- True multi-tasking capability allows weigh-in or weigh-out sequences utilizing 2-speed feed, target and spill values on all 4 scales simultaneously
- Integrated display of current weight and rate data for each scale
- Powerful PLC communications capability including custom templating of data strings
- Control up to 40 inputs and 56 outputs with internal latching for feed sequences

The IND780 is part of the new vanguard of weighing terminal solutions from METTLER TOLEDO. Similarity with other members of the terminal family ensures familiarity of operation, reducing training and support costs. Scalability within the family allows you to select the solution that is right for you and your application requirements.

Besides its flexibility, the IND780 is also offered with a number of focused solutions. For example, a vehicle application module allows you to use the IND780 as the solution for a wide variety of inbound and outbound truck weighing applications.

IND780
Industrial Terminal

Resolution (approvable)	OIML: Class II, III, IIII to 10 000e; NTEP: Class II 100 000d; III, IIIL 10 000d
Dimensions (H×W×D)	Panel-mount: 220×320×105 mm Harsh Env. Desk/ Wall: 200×299×235 mm
Display	Backlit, Graphic, LCD, Active TFT Color; 320×240 pixels; 145 mm (5.7in) QVGA
Keypad	30 tactile feel, membrane keys for numeric entry of data, control of scale functionality and navigation
Housing	Stainless steel
Protection	Harsh: IP69k; Panel:Type 4x/12 (IP65)
Interfaces	Ethernet 10/100-baseT, USB Master, Serial RS232 (Comm 1), Serial RS232/RS422/485 (Comm 2)
Applications	Freely programmable, Vehicle, Batching, TaskExpert™
Special features and functions	Basic Functionality incl. Step Calibration, CalFree™ Calibration methodlogy; SmartTrac™ Display Modes; MinWeigh®; TraxDSP™ Digital Filtering, TraxEMT™ Maintenance Diagnostics Suite, InSite® SL
Accessories	Optional communications interfaces: PLC (one option only): ControlNet™, Ethernet IP, Profibus® DP; PROFINET, DeviceNet™, Modbus TCP; Serial (One or two): RS232/422/485 demand or continuous format; up to 115.2k baud Optional I/O Interfaces: Local: (2) 4 inputs/4 outputs (Relay); Pulse Counter Input; 4-20 mA Analog Output; Solid state relay; Remote: (8) ARM100 I/O modules, 4 in/6 out
Attachable Platforms	4: analog, POWERCELL®, IDNet, WM/WMS/WMH or X-bases, Sum
Hazardous Area Approval*	ATEX: Cat 3GD UL: Class I, II, III ; Div 2; Groups C,D IECEx: Ex nA nL [nL] IIB T4

* Please see "Hazardous Area Catalog"

Fully-Integrated
Batch Controller

- **Tracking and traceability of material, lot and batch**
- **Manual and fully-automatic batching**
- **Eliminates rework caused by incorrect or misweighed materials**
- **Uses lot number to find a bad lots or recalled batches at the touch of a button**
- **Assured conformity to food safety regulations**

The system features unmatched flexibility, with advanced batching-control technology that adheres to the ISA SP-88 Batch standard.

- Works as a standalone terminal for single or multi-scale applications.
- Optimizes your batch process with consistent, accurate material transfers
- Minimizes material waste, improves batch quality and yields increased profits

- Meets legal metrology and safety standards in most world markets; multilingual firmware adaptable to local requirements
- Features intelligent recovery from power loss to prevent waste of valuable material
- Has print capability for end-of-batch summary and custom print messages

Markets
- Food & Beverage
- Glass
- Chemical
- Pharmaceutical
- Aggregates
- Plastics
- Others

Measurement Devices
- Scales and Load-Cell Systems
- Flow Meters

Raw Materials
- Granules
- Powders
- Liquids
- Slurries

Customer Database
Stores process data and system configuration information.

IND780batch PC Configuration Tool
Configures equipment, creates and manages recipes and orders, generates track and trace data and reports.
Configuration tool downloads recipes and orders to one or more controllers.

IND780batch terminals
Control automatic and manual batching processes.

Batching System
Carries out manufacturing process.

Recipes

Orders

Printer
Terminal prints batch data automatically and on demand

Barcode Scanner
Input devices simplify material lot and batch tracking

BatchTool 780
PC-based Utility

Manage recipes, orders, batch history, printing and track-and-trace requirements with the BatchTool 780 PC tool. Multiple batch terminals can be networked to a single PC, via Ethernet TCP/IP. Create, edit and refine recipes. Create production orders and download them to the IND780batch terminal, where the operator can view an Order List and make a selection to initiate production.

Scales and Flow Meters	Up to 4, operated and displayed simultaneously
Master recipe	Up to 1,000 stored recipes, each containing up to 99 steps
Batch size adjustment	Batch size adjustment per order by %, target value or ingredient amount
Power loss recovery	After a loss of power during processing, system recovers to Pause mode without loss of data, permitting completion of batch
Configuration and setup	BatchTool 780 PC-based configuration tool provides the interface to manage equipment, materials, recipes, orders, and reports
Material management	Up to 999 material paths are supported (maximum 42 automatic feeds and 28 automatic discharges per scale)
Interface Display and keypad	TFT color graphical LCD display with backlight; numeric keypad with decimal and clear keys; tare, zero, print, select scale; screen navigation and enter keys; five softkeys, four application-specific softkeys
Reporting	Includes master recipe listing, batch control recipe history, order summary, material usage, and audit trail reports
Security	Login security levels prevent unauthorized changes to orders and control recipes
Barcode interface	Supports operator scanning of each material via Serial or USB connection
Track & Trace	Logs Batch ID, date, time, user ID, changes during the batch, success/fail status of batch; stored data can be exported as .csv
Hazardous area approval	IND780 terminal approved for use in Zone 2/22, Division 2 hazardous areas
Digital I/O options	Discrete I/O: Maximum of 40 inputs, 56 outputs. Local (Relay or Solid State): One or two modules, each with 4 inputs, external sink 5-30 VDC; 4 outputs @ 30 VAC/VDC, 1 A max. Remote: Up to 8 ARM100 I/O modules, 4 in/6 out @ 30 VDC/250 VAC, 1 A max.
Packaged Batch option	Available, pre-packaged, ready-configured batch solution with operator I/O, automatic operation, single-scale input

Tough Enough for Harsh Environments
Sensitive Enough to Weigh and Measure

Aggressive products to weigh? Harsh cleaning agents? In wet, corrosive or dusty environments? There's no reason not to expect reliably correct weighing results and trouble-free operation. IND690 application terminals are ideal for any industrial environment thanks to the stainless-steel construction.

- **Reliable results for production – 24 hours a day, 7 days a week**
- **Protection class IP69k – a match for the toughest working conditions**
- **Big Weight® display – bright, with graphics capability, even in poorly lit areas**
- **Top performance right from the start – with software pacs for even more improvement**
- **Easily integrated, easily added to, all ready for your application**

IP69k
EHEDG
NSF
EN60950
GMP

To see and be seen, with the patented Big Weight® Display*
Bright, fast and unmistakably clear, this active dot-matrix display shows the result of the weighing operation. Readable from a distance, the amply sized Big Weight® display is a special feature for professional users. Protected behind scratch-proof safety glass, the display will not dim with the years. IND690 displays are clear. In many languages, it guides the user easily and reliably. Display of the current scale only or all scales at the same time.

1 terminal, 2 models, 3 types of installation
One is sure to be just right for your purpose. Protected to Class IP69k and made of stainless steel, the bench model is also ideal for wall mounting, thanks to the adapter that allows it to be tilted and turned. Cables can be hidden underneath for the best protection against dirt and damage. The built-in model is also uncompro-

mising, featuring fast, universal installation, and maximum accessibility. It is also IP69k and stainless steel.

Thick-skinned – but sensitive
The keypad's easy-clean membrane has a smooth surface and yet each entry is clearly felt. It meets every requirement of ergonomic design, hygiene and durability. Entering data also is possible with PC keyboard or barcode reader.

Interfaces for secure connectivity
The basic version is ready to go with an RS232 data interface (e.g. to connect a printer). Up to eight more interfaces can be added easily and inexpensively for still greater modularity and flexibility.

IND690 – connection to the world of automation
The ProfibusDP-690 interface card enables the IND690 to be operated as a slave in Profibus-DP. Various functions are available to the user via the master PLC connected to the system. Here are
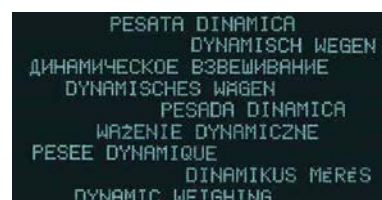
Prepared for reading and writing

Open for connections

Built-in for system integration

a few examples:

- Simultaneous access to weight values of up to four connected weighing platforms (+ 1 sum-scale) and their operation (zeroing, taring, setting default tare value, etc.)
- Selection of keys, display of texts, processing of input-sequences
- Setting of threshold values, e.g. cut-off points when dispensing

Powerful functions

All the usual weighing functions are just the beginning. Additional built-in functions, such as MinWeigh®, auto tare, target memory, test function, DeltaTrac, date/time or product identification data simplify and refine your weighing jobs – even when working with up to 4 interlinked scales (+ 1 sum scale) simultaneous.

Customized solutions

A professional PC development environment allows you to design fully customized software pacs. The IND690sys offers many useful features, such as function library, programming directions and program examples. The development environment also includes drivers for all IND690 interfaces and standard peripheral equipment.

Applications made easy

Every weighing task has its own special features and requires specialist knowledge. This is where the application-specific software pacs can help you. This software is the result of close cooperation between experts in the industry and our development department:

- **Batching** (IND690batch)
- **Data Communication** (IND690com)
- **Formulation** (IND690form)
- **Formulation Management** (IND690formXP)
- **Totalization** (IND690sum)
- **Filling** (IND690fill)
- **Counting** (IND690count)
- **Checkweighing and classification** (IND690control)
- **Free programmable** (IND690sys)

IND690
Application Terminal

Corrosion-resistant – dustproof: The IND690 application terminal will withstand all industrial environments, whether the challenge comes from aggressive weighing samples, cleaning agents or a wet, corrosive or dusty environment. The IND690 will provide reliable, precise weighing results and error-free functions for years to come.

IND690xx
Hazardous Terminal

The powerful and rugged terminal for the usage in hazardous areas. As the IND690xx technology is state of the art explosion-protection technology, this terminal is approved according to the ATEX-guideline 94/9/EG and can be used in hazardous areas of zone 2 and 22. With the IND690xx terminal we are able to offer complete and reasonable solutions, without restrictions for hazardous areas.

Resolution (approvable)	Depending on connected scale
Dimensions (H×W×D)	Desk-/wall model: 354×219×165 mm; Panel model: 355×205×100.5 mm
Display	Active, bright VFD-dot matrix, graphics capability, green, patented Big Weight®* display (weight display up to character height 35 mm possible), screen size: 195×46 mm
Keypad	Durable tactile membrane keypad with acoustic acknowledgement. Closed smooth surface of heavy duty polyester with raised buttons
Housing	Stainless steel
Protection	IP69k (Built-in model front plate only)
Interfaces	Standard: 1× RS232 (COM 1); Optional: COM 2...9 different interfaces, e.g. Ethernet, Profibus®, Bluetooth
Accessories	Optional serial interfaces: CL20mA-690; RS232-690; RS485/422-690; Bluetooth-690; USB-690; PS2-690 Optional network interfaces: Ethernet-690; ProfibusDP-690 Optional I/O interfaces: 4I/O-690; 4-690 relay box; Analog Output-690; ARM100 Mechanical accessories: Wall bracket; Floor stand; Stand base; Adapter for printer as well as cover for bench and wall models AlibiMemory-690 for up to 675,500 weighings; Strip printer GA46 **Important note IND690xx:** The 4-690, 8-690 relay boxes and the GA46 printer are not designed for use in potentially explosive areas.
Number of attachable platforms	4: IDNet (max. 3); Analog (max. 2); SICS (max. 3)
Hazardous area approvals**	ATEX Cat 3GD

* Big Weight® is a registered trademark of Mettler-Toledo (Albstadt) GmbH. German Patent 197 32 659 European Patent 0 895 071
** Please see "Hazardous Area Catalog"

Versatile and Powerful
Outstanding Weighing Performance

The IND560 family of terminals provides outstanding weighing performance for even the most difficult weighing applications. Choose conventional strain gauge, high precision electromagnetic or POWERCELL technologies. Specify direct PLC or PC communication interfaces, and digital I/O control. Combine these selections with the option of panel or desk/wall/column mounting, and the IND560 is the perfect match for most weighing applications.

The IND560 is one of the most versatile weighing terminals for:
- Basic weighing
- General process weighing
- Filling and blending
- Formulation
- Over/under checkweighing
- Tank weighing
- Vehicle weighing and
- Dynamic Checkweighing

Weigh

Enhance your measurement or control applications with an ultra fast A/D conversion rate of 366 Hz, TraxDSP™ digital filtering technology, and an I/O bus update rate of 50 Hz. The IND560 delivers precise repeatable measurement data from milligrams to tons in a single cost effective package that easily integrates into existing systems.

Control

The versatile IND560 excels in controlling filling and dosing applications. It delivers best-in-class performance for fast, precise, accurate results in manual, semi-automatic, or fully automatic operations. For more advanced filling, the Fill-560 application software provides additional sequences and I/O control options. Quickly configure standard filling sequences or create custom filling and blending applications without complex and costly programs. The new Fill-Plus for IND560 is a formula storage and management tool that allows the user to store up to 25 customer-specific formulas, rescale the formula by percentage or by the amount of one material in the formula and to assign an auxiliary output per formula. This dramatically reduces the time spent reprogramming the terminal when a different multi-material formula is needed.

Comply

The IND560 is designed specifically for industries subject to regulatory controls, such as pharmaceutical, chemical, food and beverage, and has been certified by multiple global agency standards including UL, CE, NTEP and OIML. In addition, the IND560xx is available for use in Zone 2/22 and Division 2 hazardous areas and the intrinsically safe model, the IND560x is available for use in Zone 1/21 and Division1 hazardous areas.*

Connect

The IND560 offers multiple connectivity options to improve your applications. Direct PLC connectivity is available using 4–20 mA analogue output, EtherNet/IP, Allen-Bradley RIO, Modbus TCP, Profibus, or DeviceNet protocols. Interfaces are also available for serial data via RS232/422/485, Ethernet TCP/IP networking and USB.

Solutions for the Harshest Environments

To withstand the environments of the pharmaceutical and chemical industries, the IND560 is Tapproved for Type 4/12 (Panel) and IP69k (harsh) protection categories. The needs of the food and beverage industries are also met. The unit's 304 stainless steel construction and polished, sanitary finish resist aggressive cleaning agents, high pressure and temperature cleaning requirements dictated by EHEDG and NSF guidelines. For outdoor facilities, such as tank or vehicle scales that need to guard against lightening strikes, the IND560 PDX offers the protection of POWERCELL technology.

Maintain Uptime and Ensure System Quality

- TraxEMT™, the Embedded Maintenance Technician, sets the IND560 apart. Monitor and analyze system performance to enable action before a failure occurs.
- Advanced calibration options allow for the most cost effective operation. Use the automated 5-Point or Step Calibration routines for the highest accuracy. The exclusive CalFree™ technology is available to get up and running without test weights.
- The **InSite® SL** application manages terminal configuration and data files. This indispensable utility saves and restores IND560 setup parameters to and from a PC.
- MinWeigh® functionality helps ensure the weighing of your critical ingredients is always within acceptable limits by displaying a warning when the weight is below the minimum weight threshold.

IND560
Weighing Terminal

Resolution (approvable)	100,000d / (approvable): Analog – 10,000e OIML, 10,000d NTEP; IDNet – 100,000d OIML, NTEP
Dimensions (H×W×D)	Panel-Mount: 265 × 160 × 91.8 mm; Desk/Wall/Column-Mount (Harsh): 265 × 160 × 170.3 mm
Display	Vacuum florescent, 21 mm weight display, graphical 128 × 64 dot, SmartTrac™ display modes
Keypad	25-key tactile-feel keyboard with numeric keypad
Housing	Harsh – Stainless steel; Panel – Stainless steel faceplate, Aluminum chassis
Protection	Harsh: IP69k Panel: NEMA 4/12 (IP65)
Interfaces	COM1: RS232/RS422/RS485, optional Ethernet TCP/IP with either 1 extra serial port and USB master OR 2 extra serial ports
Applications	Filling, Vehicle, Tank, Dynamic/In-Motion Legacy Communication Protocols, Freely programmable via TaskExpert™
Special features and functions	Basic Functionality incl. Step Calibration, CalFree™ Calibration methodology; SmartTrac™ Display Modes; MinWeigh®; TraxDSP™ Digital Filtering, TraxEMT™ Maintenance Diagnostics, InSite® SL
Accessories	Optional communications interfaces: PLC (one option only): Allen Bradley® Remote I/O, EtherNet/IP™, Profibus® DP; DeviceNet™, Analog Output and Modbus®/TCP; Optional I/O Interfaces: Local: (1) 4 inputs/6 outputs, Max. 12 inputs/18 outputs. Use remote ARM100 modules, 4 inputs/6 outputs each.
Attachable platforms	1: analog, IDNet, and POWERCELL® PDX®.
Hazardous area approval	ATEX: II 3 G EEx nL [nL] IIB T4 II 3 D T85°C IP6x
	FM: Class I Groups A-D, Div. 2; Class II Groups F, G, Div 2; Class III, Div 2 Class I Zone 2 Group IIC, T4

* See "Hazardous Area Catalog" for information on the intrinsically safe IND560x

ICS Terminals

The ICS__5 and ICS__9 terminal series offers seamless integration into your production processes. You can choose between different versions covering any need from simple weighing with easy operation up to advanced counting applications with integrated database.

ICS__5 General Specifications

Resolution	300,000d; 7,500e, OIML / 10,000d, NTEP
Dimensions (H × W × D)	78 x 248 x 164 mm
Display	**ICS4_5:** LCD liquid crystal graphical display with backlighting **ICS685:** Color TFT display 320 x 240 pixels
Keypad	Tactile-touch membrane keypad (PET), scratch-resistant material
Housing	Die-cast aluminium
Protection	IP65
Interfaces	1 RS232; Optional RS232, RS422 / 485, USB device/host, Ethernet, WLAN, Digital I/O, digital or anlaog 2nd scale
Power	100–240 VAC; optional battery 12 V / 2.5 A
Accessories	Cables; Stand (height 330 mm), Wall bracket, Printers, Cover, Battery charger, Relay box, Power supply with 9.28 VDC

Model specific data

	ICS425	ICS435	ICS445	ICS465	ICS685
Applications	⤓	⤓	⤓ ⋮	⤓ ⋮ ±	⤓ ⋮ ± ⤓
Color TFT display					•
colorWeight®				•	•
Configurable soft keys			•	•	•
Numeric (n) / alphanumeric (a) keypad		n		n	a
Additional interface options	1	1	1	1	3
Attachable platforms	1	1	2	2	4*

* maximum 2 analog platforms

The ICS__9 terminal series is manufactured according to the latest hygienic design guidelines. Its stainless-steel housing and

IP69k ingress protection makes it a perfect choice for wet applications in which frequent cleaning is key.

EHEDG NSF IP69k

ICS__9 General Specifications

Resolution	300,000d; 7,500e, OIML / 10,000d, NTEP
Dimensions (H × W × D)	**ICS4_9:** 132 x 232 x 115 mm **ICS689:** 170 x 260 x 114 mm
Display	**ICS4_9:** LCD liquid crystal graphical display with backlighting **ICS689:** Color TFT display 320 x 240 pixels
Keypad	**ICS4_9:** Tactile-touch membrane keypad (PET), scratch-resistant material **ICS689:** Piezo keypad scratch-resistant material
Housing	Stainless steel 1.4301, AISI 304
Protection	IP69k
Interfaces	1 RS232 ; Optional RS232, RS422 / 485, USB device / host, Ethernet, WLAN, Digital I/O, digital or anlaog 2nd scale
Power	100–240 VAC; optional battery 12 V / 2.5 A
Accessories	Cables; Stand (height 330 mm), Wall bracket, Printers, Cover, Rechargeable battery, Battery charger, Relay box, Power supply with 9.28 VDC

Model specific data

	ICS429	ICS439	ICS449	ICS469	ICS689**
Applications	⊻	⊻	⊻ ⠿ ±	⊻ ⠿ ±	⊻ ⠿ ± ⊻
Color TFT display					•
colorWeight®			•	•	•
Configurable soft keys			•	•	•
Numeric (n) / Alphanumeric (a) keypad		n		n	a
Additional Interface Options	1	1	1	1	3
Attachable platforms	1	1	2	2	4*

* maximum 2 analog platforms   ** available per Q2/2015

www.mt.com/over-under-checkweighers

Compact and Versatile
Easy Integration for Weighing

Whether the application requires a small footprint, enclosure styles to match or a broad choice of PLC connectivity interfaces, the IND131/331 family of process weighing terminals meets the challenge easily.

The terminals are compact, economical and easy to install, setup and use while offering the best solution for applications requiring fast weight data exchange with a process controller. The terminals offer improved process speed capability using inputs/outputs for executing simple process control. Their versatile form makes them an economical solution for quick, accurate, high performance weighing for analog scales. Options include:

- Choice of four enclosure styles to match process environment
- Choice of AC or DC operating voltages
- Broad range of fieldbus interfaces including serial, PLC and DIO
- Optimized target control with two speed material transfer capability
- The InSite® SL application is used to manage industrial terminal configuration and data files, which lets you save and restore IND131/331 setup parameters to and from a PC.

Resolution (approvable)

Dimensions (H×W×D)

Display

Keypad

Housing

Protection

Interfaces

Power

Applications

Special features and functions

Number of attachable platforms

Hazardous Area approval

IND331 / IND331xx Panel Mount
Process Weighing Terminal

The IND331 Panel Mount process weighing terminal is a versatile terminal that allows for integrated or remote display mounting to the base unit. A simple drill template makes it easy for panel mounting, eliminating the need for cut-outs. The bright OLED display is clear in all light conditions.

IND331
Harsh Environment
Process Weighing Terminal

For challenging industrial environments, the IND331 harsh environment terminal is housed in a stainless steel enclosure, with IP66 protection rating for desk- or wall-mounting. The terminal features the same OLED display, operator interface and flexible connectivity shared by the IND131/331 product line.

IND231/236
General Purpose Weighing Terminal

The IND231 and IND236 are suitable for a variety of general-purpose transaction weighing applications. Integrated applications include checkweighing with ten stored targets, counting with average piece weight, animal weighing and accumulation. Pre-defined application-specific print templates include date and time to provide comprehensive transaction records. The terminals can also function as remote displays.

IND331 / IND331xx Panel Mount	IND331 Harsh Environment	IND231/236
10,000d (6,000e OIML, 10,000d NTEP)	10,000d (6,000e OIML, 10,000d NTEP)	Class III: OIML 6,000e, NTEP 10,000d, CMC 6,000e, CE, cULus
168×68×12 mm (front panel only)	220×131×177 mm	**IND231:** 220×150×102 mm **IND236:** 220×150×93.3 mm
12 mm character height, OLED	12 mm character height, OLED	40 mm high weight display; seven digit/seven segment LCD with white backlight
4 function keys – flat membrane with domed polyester overlay	4 function keys – flat membrane with domed polyester overlay	Seven function keys: On/Off, Zero, Tare, Clear, Print, F1 & F2 (user-definable)
Stainless-steel front panel, plastic DIN housing	Stainless steel, desk- or wall-mountable enclosure	IND231: Plastic; IND236: Stainless steel
IP65, type4x and 12	IP66	IND231: IP54, IND236: IP66/IP67
Serial, RS232; optional RS485 with Modbus RTU protocol	Serial, RS232; optional RS485 with Modbus	Standard: COM1 RS232; Optional: COM2 – isolated RS232/RS422/RS485; COM2 – USB device; COM2 – Discrete I/O with 2 inputs and 4 outputs
Universal AC power supply or 18–36 VDC, IND331xx (DC only)	Universal AC power supply or 18–36 VDC	AC: 85–264VAC; 50Hz–60Hz; Six "AA"-size batteries (IND231), or NiMH rechargeable battery (IND231/236)
Simple basic and gain or loss-in-weight applications with 2-speed target control and limit values for three comparators	Simple weight indicating with 2-speed target control	Basic weighing, X10, Date & Time, Animal weighing, Counting with APW enhancement, Over/Under checkweighing with 10 records database, Accumulation, Remote display …
Process weighing: Direct PLC connectivity –Analog output, Allen-Bradley® RIO, DeviceNet, EtherNet/IP, Modbus® TCP, Profibus® DP, CC-Link (IND331 only), ControlNet (DC only), InSite® SL, SD card (Ac.)	Process weighing: Direct PLC connectivity – Analog output, Allen-Bradley® RIO, DeviceNet, EtherNet/IP, Modbus® TCP, Profibus® DP, CC-Link (IND331 only), ControlNet (DC only), SD card (Accessory)	Accessories: Desk bracket; Terminal protection cover
Single platform, up to 8 analog load cells (AC version) or up to 4 analog load cells (DC version)	Single platform, up to 8 analog load cells (AC version) or up to 4 analog load cells (DC version)	Up to 4 350 ohm load cells, 5 V excitation
IND331xx FM: Class1, 2, 3; Div 2; Groups A–G ATEX: II 3 G Ex nA nL [nL] IIC T5; II 3 D Ex tD A22 IP 65 T 100°C; IECEx: Ex nA nL [nL] IIC T5; Ex tD A22 IP65 T100°C	–	–

Small in Size
and Large in Performance

Specially designed for rugged industrial day-to-day tasks, METTLER TOLEDO weighing terminals have proven their worth in a wide variety of operating conditions, from heat and cold, dust and water to clean rooms and hazardous areas.

Resolution (approvable)

Dimensions (W×D×H)

Display

Keypad

Housing

Protection

Interfaces

Power

Applications

Special features and functions

Number of attachable platforms

Hazardous area approval

* Please see "Hazardous Area Catalog"

IND131/IND131xx
Junction Box
Process Weighing Terminal

The IND131 Junction Box complements the IND131 DIN-mount terminal with a load cell summing board, mounted in a robust stainless steel enclosure providing IP69k protection. The enclosure's design is service-friendly and the integrated mounting brackets simply secure wall-mounting.

IND131/IND131xx
DIN-mount
Process Weighing Terminal

The compact IND131 DIN terminal is ideal for installation requiring a small footprint without sacrificing display capability. The terminal shares the same interface, functionality and connectivity as the rest of the IND131/331 product line.

IND110
Weight
Transmitter

The IND110 load-cell signal conditioner provides an economical way to connect an analog strain-gauge scale or weigh modules to process-control equipment. The IND110 generates a 4–20 mA process signal that is typically communicated to a remote analog input on a PLC or other process control equipment.

IND131/IND131xx Junction Box	IND131/IND131xx DIN-mount	IND110 Weight Transmitter
10,000d (6,000e OIML, 10,000d NTEP)	10,000d (6,000e OIML, 10,000d NTEP)	–
251 × 261 × 169 mm	68 x 138 x 111 mm	74 × 100 × 57 mm
6 mm character height (DIN chassis operator)	6 mm character height	–
4 function keys – flat membrane with domed polyester overlay (DIN chassis operator interface, internal)	4 function keys – flat membrane with domed polyester overlay	–
Stainless steel, wall-mountable	DIN-rail mount plastic	Plastic
IP69k (IND131), IP65 (IND131xx)	IP20, Type 1	IP20
Serial, RS232; optional RS485 with Modbus RTU protocol	Serial, RS232; optional RS485 with Modbus RTU protocol	4–20 mA analog signal
Universal AC power supply or 18-36 VDC, IND131xx (DC only)	Universal AC power supply or 18-36 VDC, IND131xx (DC only)	20 to 28V DC, 300 mA max, 8 watts, Class 2 2 power supply
Simple basic and gain or loss-in-weight applications with 2-speed target control and limit values for three comparators	Simple basic and gain or loss-in-weight applications with 2-speed target control and limit values for three comparators	Simple weighing; Filling; Formulation
Process weighing: Direct PLC connectivity – Analog output, Allen-Bradley® RIO, DeviceNet, EtherNet/IP, Modbus® TCP, Profibus® DP, CC-Link (IND131 only), ControlNet (DC only), InSite® SL, SD card (AC.)	Process weighing: Direct PLC connectivity – Analog output, Allen-Bradley® RIO, DeviceNet, EtherNet/IP, Modbus® TCP, Profibus® DP, CC-Link (IND131 only), ControlNet (DC only), SD card (Accessory)	Accessories: For direct interface to PLC's and other control equipment; Machinery; Integration & Engineering Single platform, 1–4 analog load cells
Single platform, up to 8 analog load cells (AC version) or up to 4 analog load cells (DC version)	Single platform, up to 8 analog load cells (AC version) or up to 4 analog load cells (DC version)	–
IND131xx FM: Class 1, 2, 3; Div 2; Groups A–G ATEX: II 3 G Ex nA nL [nL] IIC T5; II 3 D Ex tD A22 IP 65 T 100°C; IECEx: Ex nA nL [nL] IIC T5; Ex tD A22 IP65 T100°C	IND131xx FM: Class 1, 2, 3; Div 2; Groups A–G	

Tough Terminals
for Speed and Accuracy

Choose a process instrument oriented to real working environments that offers certified industry standard interfaces for quick and robust connectivity. Speed up your processes and profit from the performance of these certified instruments.

Resolution (approvable)

Dimensions (W×D×H)

Display

Keypad

Housing

Protection

Interfaces

Power

Applications

Special features and functions

Accessories

Number of attachable platforms

Hazardous Area approval

IND246/IND246 POWERCELL
Versatile Weighing Terminal

The IND246 terminal is available with analog or POWERCELL load cells in an AC version or analog load cells in a battery-powered version, and includes five special applications in addition to simple weighing. Dedicated function keys simplify operation, and the large, clear display makes information easily readable.

IND560 PDX
Vehicle Weighing Terminal

The IND560 PDX terminal interfaces with METTLER TOLEDO POWERCELL® PDX® load cells that feature advanced diagnostic capabilities. The robust construction of the IND560 PDX is ideally suited for the industrial environments typical of vehicle weighing.

IND780 PDX
Vehicle Weighing Terminal

The IND780 PDX terminal offers a choice of vehicle weighing applications or freely-programmable customization. Take advantage of true multi-tasking in systems with multiple scale platforms, and leverage data and control communications through any of a wide array of interface options.

IND246/IND246 POWERCELL	IND560 PDX	IND780 PDX
6,000e (OIML), 10,000d (NTEP)	10,000e (OIML), 10,000d (NTEP)	10,000e (OIML), 100,000d (NTEP)
230 x 150 x 190 mm	Harsh environment: 265 x 160 x 170 mm Panel mount: 265 x 160 x 92 mm	Harsh environment: 200 x 299 x 235 mm Panel mount: 220 x 320 x 105 mm
Backlit 240 x 96 dot graphic LCD Basic weigh mode: 27 mm character height Application mode: 20 mm character height	21 mm character height, dot matrix vacuum fluorescent	Backlit, Active TFT color graphic 320 x 240 pixels QVGA
7 function keys, navigations keys, numeric keypad	3 function keys, 5 softkeys, navigation keys, numeric keypad	4 scale function keys, 5 softkeys, 4 programmable application keys, navigation keys, numeric keypad
Stainless steel, desktop or wall mount	Harsh environment: Stainless steel Panel: Stainless steel, aluminum chassis	Stainless steel
IP66	Harsh environment: IP69k Panel mount: NEMA 4x/12 (IP65)	Harsh environment: IP69k Panel mount: IP65
Analog version: 1 electrically-isolated serial port: RS232; optional serial port: RS232/RS485; serial port and D I/O interface; Ethernet TCP/IP, optional USB interface; optional USB and D I/O interfaces. **POWERCELL version:** 1 isolated RS232/RS422, RS485 port, optional additional isolated RS232/RS485, USB Ethernet TCP/IP, 10/100 Base-T port.	2 electrically isolated serial ports (COM1: RS232/RS422/RS485. COM4: RS232). Optional Ethernet TCP/IP with either 1 extra serial port and USB master OR 2 extra serial ports	Ethernet 10/100-base T, USB Master, Serial RS232 (COM1), Serial RS232/422/485 (COM2)
AC: Universal P/S Battery: Internal NiMH battery pack (additional external charger required)	Universal AC P/S 85 to 264 VAC at 49 to 61 Hz	Universal AC P/S 100 to 240 VAC at 49 to 61 Hz
Vehicle weighing; animal weighing; over/under checkweighing; counting; peak weighing; simple weighing	Vehicle weighing; single and multi-material filling, blending and dosing; over/under checkweighing; simple weighing	Axle-780 single-platform vehicle weighing; Drive-780 inbound/outbound vehicle weighing with traffic control; COM-780 legacy communications protocols module
Vehicle application includes totalization per ID. IND246 supports storage for up to 99 permanent and 99 temporary (2-pass) ID records. The IND246 POWERCELL supports storage for up to 99 permanent and 99 temporary (2-pass) ID records with microSD card.	QWERTY keyboard input via optional USB port. Material transfer operations integrated into vehicle weighing process	Udrive-780 unattended vehicle weighing solution: single-scale inbound/outbound weighing using Temporary and Permanent vehicle IDs; shipping and receiving mode; vehicle filling; up to four user-defined tables for data accumulation; standard ticket templates; traffic control.
InSite® SL, external battery charger, stainless steel Tilt-Swivel bracket	Optional communications interfaces: PLC (one option only): Allen Bradley® Remote I/O, Ether-Net/IP™, Profibus® DP; DeviceNet™, Analog Output and Modbus®/TCP; Optional I/O Interfaces: Local: (1) 4 inputs/6 outputs, Max. 12 inputs/18 outputs. Use remote ARM100 modules, 4 inputs/6 outputs each. InSite® SL.	Optional communications interfaces: PLC (one option only): ControlNet™, Ethernet IP, PROFIBUS® DP, PROFINET, DeviceNet™, Modbus TCP. Serial (one or two): RS232/422/485 demand or continuous format; up to 115.7 k baud; Optional I/O interfaces: Local (2) 4 inputs/4 outputs (Relay); Solid state relay; Remote: (8) ARM100 I/O modules, 4 in/6 out. InSite® SL
Single platform, 1 to 8 analog AC version, 1 to 4 analog battery version or 12 POWERCELL® PDX® or GDD™ version	Single platform, up to 14 POWERCELL PDX load cells	Up to 24 POWERCELL PDX load cells, when using external 24VDC power supply. Up to 3 scale platforms plus sum scale.
–	–	ATEX Category 3, USA Division 2 IECEx

Industrial
Compact Systems

Designed to Speed up Production
Where Hygiene Counts

Production operators need to be familiar with their weighing systems. This is an important basic requirement for optimized production. But how can this be achieved as every workplace is different? The ICS food scale line can be seamlessly integrated into your production process as your weighing solution will be individually configured for fast and precise operations – exactly according to your needs.

Speed up your production process
Each of the ICS bench and portable scales is based on five different terminal models. Each of them can be ergonomically mounted in three different ways to the weighing platform. Choose from a broad range of platform sizes and capacities. An optimal combination increases process security, leads to less production failure and speeds up your productivity.

Ergonomic working procedures
To optimize your process, you choose the placement of your terminal for the best ergonomic position. It can be either fixed directly on the platform, mounted on a column or separated for desk or wall mounting.

Designed for fast and efficient cleaning
The whole product family is built according to the latest international hygienic guidelines. The open stainless-steel construction minimizes contamination traps and provides easy access to all parts for fast and efficient cleaning. The total hygienic design of the product line will assist your hygienic compliance efforts.

Seamless data integration
Scales are important identification points in your traceability process. Various interface options offer easy integration into existing data-management systems. External devices, such as printers, barcode readers and labeling equipment can easily be integrated.

All terminal models guarantee a simple and straightforward weighing process. The large display facilitates clear and comfortable data reading. Due to three selectable display modes different parameters are shown. High precision speeds up your production.

All relevant parameters are easily entered on the large and robust keypad. Specific information buttons deliver further weighing parameters and historical data for traceability at your fingertips.

ICS4_9: Resist 24/7 Wet and Harsh

Compact – ICS__9…f
Terminal fix mounted in front of the weighing platform. One unit, portable and robust.

Compact – ICS__9…t
Suitable for wall mount, bench or desk operation. The ICS stand-alone terminal can be easily used and integrated with any other platform including floor scales.

Compact – ICS__9…c
Weighing terminal and column are seamlessly welded together. The back column design secures and protects cables.

Application Levels

➤ **Basic Weighing**

For fast and intuitive working procedures

➤ **Accelerated Over/Under Checkweighing**

Above tolerance

Within tolerance

Below tolerance

colorWeight® provides clarity with full-color graphics for unmistakable results
The colored backlight of the LC display provide easily readable and unmistakable information as to whether the weight is within the tolerance limit. Different color options can be configrured in the set up menu.

➤ **Classifying**

Class 1

Class 2

Class 3
•
•
> Class 12

Utilize up to 12 customized weighing ranges to quickly and accurately classify your products and see the result directly on your color display.

colorWeight®

IP69k

ICS4_9 for Fast and Complete Washdown
From light wet to harsh conditions, the full stainless-steel scale platforms provide a flexible and rugged solution for a wide range of weighing tasks. All parts have been built according to the latest hygienic design guidelines supporting an easy, fast and efficient cleaning procedure.

ICS689: Seamless Integration for Fast, Reliable and Traceable Processes
Weight values and product identification with smart terminals feature fully graphic screens and data transfer at high speeds through Ethernet or WLAN interfaces, all designed for tough industrial use. The ICS689 product range is certified according to the latest hygienic design guidelines of EHEDG[1] and NSF[1] and protected by IP66, IP68, IP69k to sustain harsh washdowns.

[1] EHEDG (European Hygienic Engineering and Design Group); NSF (National Sanitation Foundation)

Not all products available in all countries. Please check with your local METTLER TOLEDO sales representative.

Only a Few Steps
To Tailor Your Scale

1 **Choose an Application / Terminal**

	ICS429	ICS439	ICS449	ICS469	ICS689**
Applications					
Color TFT display					•
colorWeight®			•	•	•
Configurable soft keys			•	•	•
Numeric (n) / alphanumeric (a) keypad		n		n	a
Additional interface options	1	1	1	1	3
Attachable platforms	1	1	2	2	4*

* maximum 2 analog platforms   ** available per Q2/2015

2 **Platforms for the ICS4_9**

Resolution E1	Capacity & Readability*				
1x 3,000e	3 kg	6 kg	15 kg	30 kg	60 kg
Platform Size (mm)					
A 240 x 300**	1 g	2 g	5 g		
BB 300 x 400**				10 g	20 g
B 400 x 500				10 g	20 g
QA 229 x 229**		2 g			
QB 305 x 305**			5 g	10 g	20 g

Three different types of load cells available: IP65, IP65 & 67, IP68 & IP69k.

*   Approved by Weights & Measures: OIML Class III 3,000e, NTEP 5,000d, Resolutions up to 15,000d, not approved by W&M.

**   …C-types with welded columns available

3 Platforms for the ICS689   IP68   IP69k

Resolution e1/e2 2x 3,000e MR*	Capacity & Readability*							
	3 kg	6 kg	15 kg	30 kg	60 kg	150 kg	300 kg	600 kg
Platform Size (mm)								
A 240 × 300**	1 g	1 / 2 g	2 / 5 g					
BB 300 × 400**				5 / 10 g	10 / 20 g			
B 400 × 500				5 / 10 g	10 / 20 g	20 / 50 g		
BC 500 × 650					10 / 20 g	20 / 50 g	50 / 100 g	
CC 600 × 800					10 / 20 g	20 / 50 g	50 / 100 g	100 / 200 g
QA 229 × 229		1 / 2 g						
QB 305 × 305**			2 / 5 g	5 / 10 g	10 / 20 g			
QC 457 × 457					10 / 20 g	20 / 50 g		

*   Approved by Weights & Measures: OIML Class III 2x 3,000e (1x3000e for 3kg platform), NTEP 5,000d, Resolutions up to 30,000d, not approved by W&M.

** …C-types with welded columns available

4 Accessories / Communication

Interfaces, Plugs, Adapters	RS232, RS422, RS485, Ethernet, USB Device, USB Host, digital I/O, WLAN
I/O Accessories	Relay box for digital I/O incl. power supply
Mechanical Parts	Protective cover for terminals Wall bracket Desk mounting plate
Stands	In many heights and versions
Others	Printers, interfaces, cables and much more

5 Service

Installation & Setup	Installation, setup, data loading, user training to ensure fast, initial start-up
Qualification	Equipment qualification to meet your local or international quality system requirements
Calibration	Calibration and certification to meet production or regulatory requirements
Preventative Maintenance	On-going maintenance to ensure dependable operation and long equipment life

Versatile – Durable
Designed for Your Environment

Are you looking for a new compact scale that is designed for your industrial environment? If so, the new ICS4_5 and ICS685 are the right choice for you. Choose from a wide range of construction types, accessories, applications, capacities and required weighing performance.

Versatile
- Design options offer ergonomic set-up.
- Easy scale set-up due to digital platform and terminal interfaces allow you to weigh right out of the box.
- Up to 15 hours mobile operation with a rechargeable, removable battery

Durable
Prolonged usage in industrial environments through:
- Extremely rugged die-cast aluminum housing
- Overload protection
- Robust foil keypad
- Dust-proof, IP65 protected terminal

colorWeight®

101 PCS
above target

100 PCS
ok

99 PCS
below target
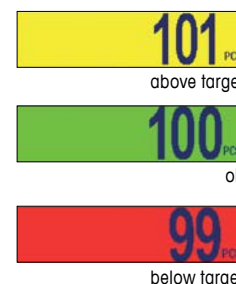
ICS4_5 and ICS685 compact scales and terminals provide various connectivity options, making the counting or checkweighing process more flexible and integrated. A broad device assortment can be connected to the scale, simplifying the weighing task. The portfolio is complemented with various interface options for existing IT systems and a scale-embedded database with smart export/import functionality by USB memory stick.

Seamless integration
ICS4_5 and ICS685 solutions offer seamless and reliable connectivity. In order to ease and speed-up the weighing processes, the scales can be connected with barcode/RFID scanners, external keyboards, light alarms, printers and computers. The scales offers an open structure and can be linked in various ways (e.g. via OPC server) to an existing ERP or warehouse management system to an existing external database.

Various interface options
ICS4_5 and ICS685 solutions feature RS232 as standard interface. Additional interfaces as options are RS232, RS422/485, USB device, USB host, Ethernet, WLAN, digital/analog 2nd scale, digital I/O.

Basic Weighing ICS425/435

- ICS425 simple weighing from 0.6 kg up to 600 kg
- ICS435 simple weighing with numeric keypad for easy pre-taring

Basic Counting ICS445

- Easy to operate counting scale
- Second scale option
- User prompting
- Configurable softkeys for fast access to key applications

Advanced Counting ICS465

- Superior piece counting, totalizing and checkweighing scale
- colorWeight® display
- Scale-embedded database
- Second scale option

ICS685 for Total Flexibility

Speed counts in today's competitive environment. Manufacturers not only have to deliver error free, high-quality products, but also need to produce on time. With the new ICS685 Industrial Compact Scales and terminals you can achieve both. Benefit from an intuitive user menu, an extremely robust design, a wide range of capacities and easy-to-use weighing applications such as counting, checkweighing, totalizing and filling.

User-definable function keys, a big colored TFT display and customizable user prompting make your everyday operations fast and more precise. A broad variety of interfaces guarantees perfect integration into your system and offers the possibility to connect up to four scales.

Benefit from an efficient inventory management with an individually definable article database for up to 30,000 data records. Data is easy to call up with a barcode reader or external keyboard.

Applications and Designs
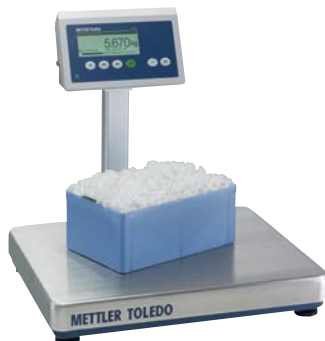
Model with accessory column

Compact model

Table model (detachable terminal)

Five Steps to Tailor Your Scale

1 ## Applications / Terminals

	Basic Weighing		Basic Counting	Advanced Counting	Multi Functional
	ICS425	ICS435	ICS445	ICS465	ICS685
Functions					
Key: Power / Clear / Unit switching	•	•	•	•	•
Key: Zero / Tare	•	•	•	•	•
Key: Info	•	•	•	•	•
Key: Printing / Data transfer	•	•	•	•	•
5 Configurable softkeys			•	•	•
Numeric keypad		•		•	•
Graphic LCD display with backlights	•	•	•	•	Color TFT screen
colorWeight® function				•	•
User prompting			•	•	•
Selectable display modes	•	•	•	•	•
Alibi memory[1]			•	•	•[2]
Database				•	•
Software to manage database				•	•
User management					•
Printing	•	•	•	•	•
Optional exchangeable battery	•	•	•	•	•
Die-cast aluminium housing, IP65	•	•	•	•	•
Date and time	•	•	•	•	•
Languages: English, German, French, Italian, Spanish, Chinese	•	•	•	•	•
Weighing Applications					
Straight weighing	•	•	•	•	•
Average weighing	•	•	•	•	•
Counting			•	•	•
Totalizing				•	•
Totalizing to a target					•
Over / Under Checkweighing				•	•
Number of attachable platforms	1	1	2	2	4
Fully Automated Calibration Technology (FACT) for MonoBloc® scale	•	•	•	•	•

2 ## Interface Options / Accessories

Data Interfaces	Standard: RS232 plus optional interfaces selectable from: RS232, RS422/485, USB device, USB host, Ethernet, WLAN, Digital I/O, digital/analog 2nd scale
I/O Accessories	Relay box for digital I/O including power supply
Printers	METTLER TOLEDO standard and various third party printers
Mechanical Parts	Protective cover for terminals, wall bracket, roller tops,
Stands	Wide range of heights and versions
Others	Barcode scanners and much more

[1] Alibi memory is a memory of a Weights & Measures approved weighing system. It is a scale embedded database that stores weighing data. This feature allows you to see particular measurement details. The data, once stored in the Alibi memory, cannot be tampered with. This protects you in case of customer claims or complaints and generates customer confidence by providing proof of accurate measurements and weight for correct billing.

[2] The ICS685 offers the possibility to ex change the Alibi memory to a free configurable transaction memory.

3 Scale Design / Dimensions

Terminal

Compact model with small housing

Compact model with large housing

Stand model with accessory column (height: 330 mm)
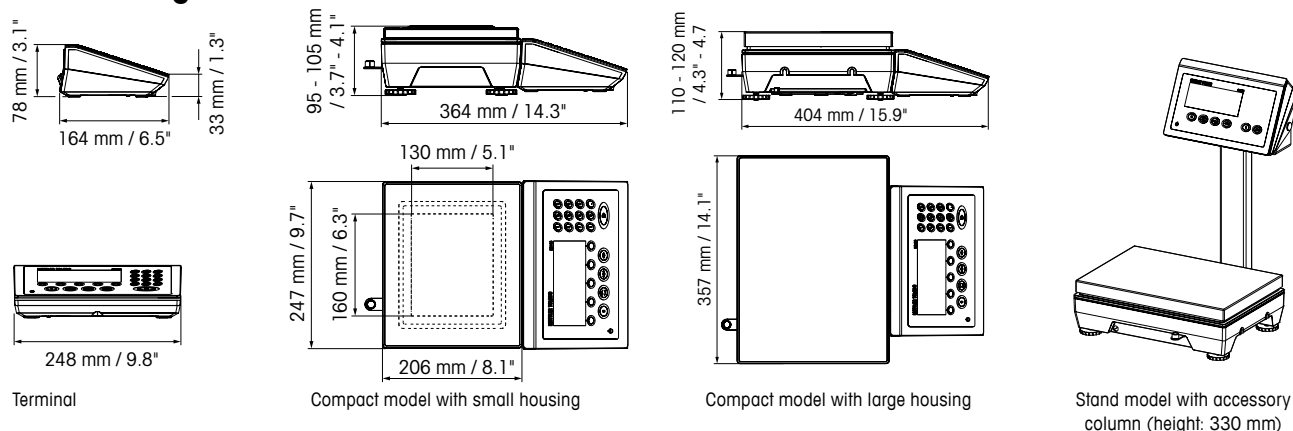
4 Capacity / Resolution

For highest precision: MonoBloc® technology

ICS425k- / ICS435k- / ICS445k- / ICS465k- / ICS685k-

Model (Single Range)	0.6XS/f	3XS/f	6XS/f	6SM/f	15LA/f	35LA/f
Capacity (kg)	0.61	3.1	6.1	6.1	15.1	35.1
Standard readability (g)	0.001	0.01	0.01	0.1	0.1	0.1
Approved readability (g)	0.01	0.1	0.1	1	1	1
Model (Delta Range)	0.6XS / DR / f	3SX / DR / f	6XS / DR / f	6SM / DR / f	15LA / DR / f	35LA / DR / f
Capacity (kg)	0.12 / 0.6	0.6 / 3	1.2 / 6	1.2 / 6	3 / 15	7 / 35
Standard readability (g)	0.001 / 0.01	0.01 / 0.1	0.01 / 0.1	0.1 / 1	0.1 / 1	0.1 / 1
Repeatability (sd) (g)	0.001	0.01	0.01	0.1	0.1	0.1
Linearity (g)	0.002	0.02	0.02	0.2	0.2	0.2
Housing size	Small	Small	Small	Small	Large	Large
Platform size (mm)	160 x 130	160 x 130	160 x 130	240 x 200	350 x 240	350 x 240
Ingress Protection: **Standard/Optional**	IP54 / -	IP54 / IP65	IP54 / IP65	IP54 / IP65	IP54 / IP65	IP54 / IP65
Weight of scale (kg)	6.4	5.7	5.7	5.7	9	9

For best performance: Strain gauge technology

ICS425d- / ICS435d- / ICS445d- / ICS465d- / ICS685d-

Model	3SM/f	6SM/f	15LA/f	35LA/f	PBD655
Capacity (kg)	3	6	15	35	for higher capacities from 6 – 600 kg, 1 x 6,000e see brochure PBD655 Digital Weighing Platform
Standard readability (g)	0.5	1	2	5	
Optional readability (g)	0.05	0.1	0.2	0.5	
Approved readability (g)	0.5	1	2	5	
Repeatability (sd) (g)	0.05	0.1	0.2	0.5	
Linearity (g)	0.1	0.2	0.5	1	
Housing size	Small	Small	Large	Large	240 x 300 mm - 600 x 800 mm
Platform size (mm)	240 x 200	240 x 200	350 x 240	350 x 240	
Ingress Protection: **Standard/Optional**	IP54 / IP65	IP54 / IP65	IP54 / IP65	IP54 / IP65	IP65 / -
Weight of scale (kg)	5.5	5.5	7.7	7.7	-

5 Service

Installation & Setup	Installation, setup, data loading, user training to ensure fast, initial start-up
Qualification	Equipment qualification to meet your local or international quality system requirements
Calibration	Calibration and certification to meet production or regulatory requirements
Preventative Maintenance	On-going maintenance to ensure dependable operation and long equipment life

Scales

Simple But Efficient

**The cost effective scales for many applications
in dry and occasionally wet industrial environments.**

BBA236
For Demanding Applications

3 – 150 kg

IP65

The BBA236 stainless-steel scale is a robust and easy to operate one-for-all solution and a perfect fit for many applications in dry and short time wet industrial environments. The user-friendly terminal, with its highly visible display, is fast and easy to operate and measurably improves production efficiency.

Resolution (approvable)	15'000 d (OIML Class III, 3,000e)
Capacity (kg)	3 kg to 150 kg
Dimensions (W×D×H)	Stainless steel (1.4301 / AISI304) 3 sizes from 240 x 300 to 400 × 500
Display	7-digit, 7-segment 60 mm/2.36", LCD display with white backlight
Keypad	7 membrane keys
Terminal Housing	Stainless steel (1.4301 / AISI304)
Ingress Protection	IP65
Interfaces	RS232
Power Supply	85…264 VAC, 50/60 Hz NiMH rechargeable battery (option)
Applications	Weighing, Checkweighing, Counting, Totalizing and Animal weighing

BBA231
For Simple
Applications

The BBA231 scale is a perfect fit for your daily, simple applications in dry areas, such as in your receiving department or warehouse. The terminal, with its large display, is fast and easy to operate.

BPA224
Easy to Use
and Mobile

The BPA224 compact food scale works best for fast weighing and portioning in dry and light-duty wet food production and packaging applications.

BBA231	BPA224
15'000 d (OIML Class III, 3,000e)	7'500 d (OIML Class III, 3,000e)
6 kg to 300 kg	1.5 kg to 15 kg
Carbon steel 5 sizes from 240 x 300 to 600 × 800	Load Plate: Stainless steel 180 × 230
7-digit, 7-segment 60 mm/2.36", LCD display with white backlight	6 characters, 7-segment LED, dual display, stabilization time <1s
7 membrane keys	4 membrane keys
Plastic	Plastic
IP54	IP65
RS232	-
85…264 VAC, 50/60 Hz 6 x AA batteries	Rechargeable battery
Weighing, Checkweighing, Counting, Totalizing and Animal weighing	Weighing, Portioning, Packaging

Complete Floor-Scale Solutions
Masters of Their Class

**This comprehensive family of floor scales is your entry
into the METTLER TOLEDO reference class.**

This product line consists of standard floor scales, low-profile floor scales and pallet scales bundled with terminals. They are ready to use. The terminal and platform are permanently joined and aligned with each other. The user friendly terminal, with its highly visible display, is fast and easy to operate and measurably improves production efficiency.

The proven RockerFoot suspension gives the weighing platforms the required flexibility. It prevents distortions and consistently provides precise measurements. All floor scales are available in stainless steel and in a painted version. Accessories, like ramps and stands are also available.

BFA231/BFA236
Multi-talented Scale

With a capacity of up to 3,000 kg, the BFA231/BFA236 is the complete solution for many applications. Optional ramps make it easy to load with a lift truck. The painted BFA231 is supplied with the sturdy IND231 terminal. The stainless-steel version BFA236 is designed for use in harsh environments and is supplied together with the stainless-steel IND236 terminal.

Resolution e 3,000e SR*	Capacity	
	1,500 kg	3,000 kg
Platform Size: E 1,500 x 1,250 mm	500 g	1,000 g
Platform Size: ES 1,500 x 1,500 mm	500 g	1,000 g

* SR = Single Range

Scale Material	**BFA231:** painted	
	BFA236: stainless steel (AISI304)	
Load Plate Material	**BFA231:** painted, riffled surface	
	BFA236: stainless steel (AISI304), smooth surface	
Protection	**Terminal:** IP54 (BFA231), IP66/IP67 (BFA236);	
	J-BOX: IP68 (BFA231, BFA236)	
	Load cell: IP67 (BFA231), IP68 (BFA236)	
Scale Interface	Analog	
Accessories	Terminal stands, ramps	
Weighing Terminal	**BFA231:** IND231 plastic housing 5 m connection cable	
	BFA236: IND236 stainless steel housing 5 m connection cable	

BUA231, BUA236
Low-profile Scale

Its rugged design makes the low-profile scale BUA231/BUA236 a durable, reliable and precise measuring instrument. The low overall height of 50 mm makes the scale very easy to load. An optional ramp also eases the loading. The painted BUA231 is supplied with the sturdy IND231 terminal. The stainless-steel BUA236 is designed for use in harsh environments and is supplied with the stainless-steel IND236 terminal.

Resolution e 3,000e SR*	Capacity	
	600 kg	1,500 kg
Platform Size: DS 1,000 x 1,000	200 g	500 g
Platform Size: EES 1,250 x 1,250	200 g	500 g

* SR = Single Range

Scale material	**BUA231:** painted
	BUA236: stainless steel (AISI304)
Protection	**Terminal:** IP54 (BUA231), IP66/IP67 (BUA236);
	J-BOX: IP68 (BUA231, BUA236)
	Load cell: IP67 (BUA231), IP68 (BUA236)
Scale interface	analog
Accessories	Terminal stands, ramps
Weighing terminal	**BUA231:** IND231 plastic housing 5 m connection cable
	BUA236: IND236 stainless steel housing 5 m connection cable
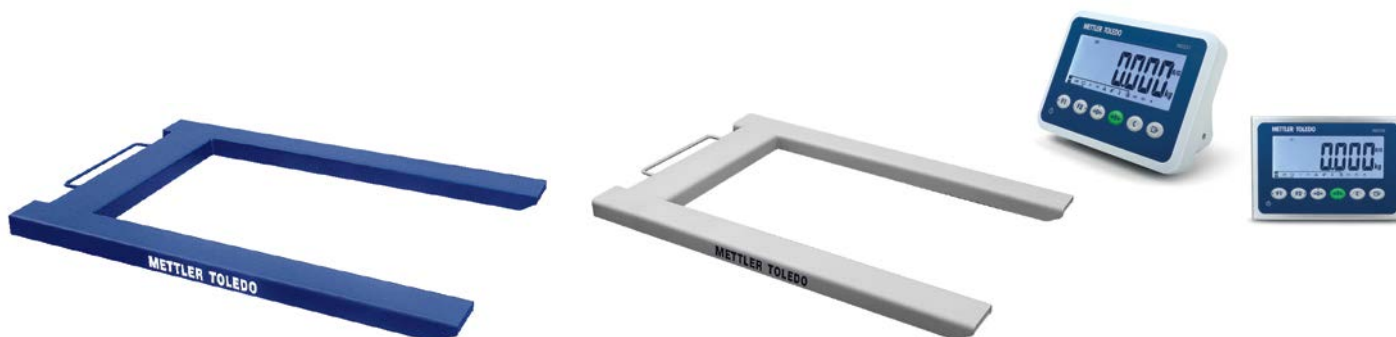
BSA231/BSA236
Mobile Pallet Scale

The pallet scale BSA231/BSA236 is ideal for any goods-handling area. It can be deployed easily thanks to rollers in the fork ends and a grab handle on the frame. Bring the scale to the goods and not vice-versa. You can perform weighing on site. The painted BSA231 is supplied together with the sturdy IND231 terminal and matched to it. The stainless steel version BSA236 is designed for use in harsh environments and is supplied with the stainless steel IND236 terminal.

Resolution e 3,000e SR*	Capacity	
	600 kg	1,500 kg
Platform Size (length x interior width): 1260 x 600	200 g	500 g

* SR = Single Range

| Scale material | **BSA231:** painted |
	BSA236: stainless steel (AISI304)
Protection	**Terminal:** IP54 (BSA231), IP66/IP67 (BSA236);
	J-BOX: IP68 (BSA231, BSA236)
	Load cell: IP67 (BSA231), IP68 (BSA236)
Scale interface	analog
Accessories	Terminal stand
Weighing terminal	**BSA231:** IND231 plastic housing 5 m connection cable
	BSA236: IND236 stainless steel housing 5 m connection cable

Pallet Truck Scales

Speed up your warehouse and shipping processes with the BTA family of mobile pallet truck scales.

BTA231

BTA231-555E
Pallet Truck Scale

1,500 kg

IP65

The BTA231 Pallet Truck Scale features a long-life, rechargeable battery for up to 95 hours of mobile operation. It is the right choice for transport and weighing of palletized goods up to 4,000 pounds in a safe and easy manner.

Rugged and cost-effective, this scale features a dependable terminal including a large, easily visible display and efficient keyboard. It is a perfect fit for any warehouse, where precise and mobile weighing is crucial.

Speed up your warehouse and shipping processes with the METTLER TOLEDO BTA231 mobile truck scale.

Specifications BTA231-555E Pallet Scale

Maximum Capacity	600 / 1,500 kg
Readability	1 kg
Fork Size	555 mm x 1,150 mm
Material	Mild steel painted
Keypad	7 membrane keys (On/Off, Zero, Tare, Function, Clear, Print, Function 1 & 2)
Display	7-digit, 7-segment 60 mm, LCD display with white backlight
Battery	Battery: 6 VDC, 10 Ah (~95 hours operation time)
Application	Straight weighing, counting, over/under checkweighing, totalizing
Features	Date & Time (RTC), x10, Print, Unit switch, Target storage

Features and Benefits:
- Excellent readability under any light condition thanks to a large LCD display with adjustable white backlight
- Five simple and intuitive to operate keys (On/Off, Zero, Tare, Clear, Print) plus two free definable function keys for easy set up and operation
- Long stand alone operational life (>95 hours)
- Effortless steering over uneven surfaces, thanks torobust turning wheels
- Ergonomic full-function handle – easy to lift, easy to move, easy to weigh

BTA439e

BTA469

BTA439-RE1500
Mobile Pallet Truck Scale

1,500 kg

IP65

The BTA439e is designed for basic industrial use. The weighing system is powered by an exchangeable and rechargeable battery pack. This integrated power supply enables you to weigh anywhere the pallet truck goes.

Mobile weighing means cost saving. By using a pallet truck scale you can work more efficiently. Weigh pallets, containers and more while saving tfloor space and handling time.
The BTA439e offers:
• 1,500 kg capacity
• A large display with 22 mm high weight readout
• IP65 protection class
• Battery status in the display
• An extra battery pack as standard
• Attractive price

Specifications BTA439-RE1500

Maximum Capacity	600 / 1,500 kg
Readability	0.2 / 0.5 kg
Readability Approved	0.2 / 0.5 kg
Battery Capacity	1.2 Ah
Battery Life, continuous use	5 hours
Charging Time	6 hours
Scale material	Steel
Terminal Type	ICS439
Minimum Load	4 kg
Charger + 2nd Battery Pack	Included
Steering wheels	Rubber (Optional: Polyurethane)
Loading wheels	Polyurethane, tandem
Protection class	System IP65, Load Cells and Terminal IP67
Material Number(s)	96111153

BTA469-RS2000
Mobile Pallet Truck Scale

2,000 kg

IP65

The BTA4x9s is designed for use in tough warehouse applications and production facilities. The system is based on 4 load-cells, 1,000 kg each. A built-in rechargeable battery powers the weighing system and provides enough energy to work a whole day on a fully charged battery. This integrated power supply enables you to weigh anywhere the pallet truck goes.

Mobile weighing means cost saving. You can work more efficient by bringing the scale to the load instead of moving the load to the scale. WiFi output integrates the BTA4x9s in your WLAN and can be used just like stationary wired network scales.

The BTA4x9s offers:
• Full stainless steel pallet truck
• A large display with height adjustable characters
• IP65 protection class
• Battery status in the display
• 7Ah built-in rechargeable battery

Specifications BTA469-RS2000

Maximum Capacity	1,000 / 2,000 kg
Readability	0.5 / 1 kg
Readability Approved	0.5 / 1 kg
Battery Capacity	7 Ah
Battery Life, continuous use	25 hours
Charging Time	8 hours
Scale material	100% Stainless Steel AISI 304/14301
Terminal Type	ICS469
Minimum Load	10 kg
Charger	Included
Steering wheels, with Corrotec Bearings	Polyamid (Nylon) (Optional: Polyurethane)
Loading wheels, with Corrotec Bearings	Polyamid, single (Optional: Polyamid, tandem / Polyurethane, single)
Surface finish	Bead blasted
Protection class	System IP65, Load Cells and Terminal IP67
Terminal Type with WiFi Option	ICS669
Material Number(s)	96111160

Soar to New Heights
with Baggage Scales

- **Easy-to-use software**
- **Vacuum fluorescent display for multiangle readability**
- **Graphic and alphanumeric messages**
- **Multi-language capabilities**
- **Fuss-free integration with baggage-handling systems**

IND205
Airport Baggage Scales

150 – 5,000 kg

Compact design, easy to use, superior display, and packed with functionality.

Resolution	3,000e
Capacity (kg)	150, 300, 600, 1,000, 2,000, 5,000
Readability (g)	100
Dimensions (W×D×H, mm)	Operator Terminal: 185×84×136 Passenger Display: 122×28×86
Display (Operator Terminal)	128×64 dot-matrix high brightness vacuum fluorescent
Keypad	5 function keys
Housing	Stainless steel front frame, metal housing
Platform	Customised
Interfaces	1× RS232/RS485 Operator Terminal: 6-wire load cells, 4× 350Ω analog load cells Passenger Display/Operator Panel: RS232 via RJ45 interface
Power	100 – 240 V AC 50/60Hz 0.2 – 0.5 A
Applications	Baggage weighing

Check-In

Processing Beef, Pork or Lamb

Overhead rail scales for loads from 150 to 1,200 kg can be integrated easily into various types of conveyor systems to facilitate precise and rapid weighing of carcasses.

We supply static or in-motion versions that can weigh up to 1,200 carcasses per hour. Strain-gauge and analog or digital sensor technologies are rugged and guarantee precise weighing results. Combined with the wide range of terminals, verifiable system solutions of up to 3× 3,000e multi-interval can be realized.

MO
Overhead / Monorail Scales

150 – 1,200 kg

IP67

Our hybrid design (digital strain-gauge weighing cell and lever arm system) means that measuring rail inserts can be detached from the weighing system so vibrations have no effect on the weighing result. The standard rail insert support is suitable for conventional tubular systems, while the universal rail insert support and adaption plate ensure easy integration in a wide range of rail systems.

Resolution	Approved: 3× 3,000e Multi Interval
Capacity (kg)/ **Readability approved (g)**	600/200, 300/100, 150/50 1,200/500, 600/200, 300/100
Dimensions (mm)	Weighing rail insert length: 800, 1,000
Scale Material	Hot galvanized (Powder-coated lever arms)
Protection	IP67
Interfaces	Scale interface: IDNet
Accessories	Adaption plate; Standard weighing rail insert support; Universal rail insert support; Weighing rail inserts; Tubular track adapters; Elbows small / large; IDNet cable accessories
Suitable Indicators	ICS4_9, ICS6_9, IND560, IND690, IND780, IND890 and more

DO/DSO
Overhead/Monorail Scales

150–300 kg

IP65

The DO300 overhead rail scale is equipped with two strain gauge weighing cells and is designed for weighing up to 300 kg. The rugged and torsionally rigid unit is fixed below the mounting support compact installation in very small spaces.

DSO scales can be easily integrated regardless of the type of rail system used, as both versions offer an universal adaption plate that can be installed above and around the rail.

Model	DO
Resolution	Approved: 1× 3,000e Single Range Non-approved: up to 15,000d (depending on the application/vibrations)
Capacity (kg) / Readability approved (g)	300/100
Dimensions (mm)	Weighing rail insert length: 600, 800, 1,000
Scale Material	Hot galvanized
Protection	IP65
Interfaces	Scale interface: IDNet, analog
Accessories	IDNet cable accessories
Suitable Indicators	IND4_5, ICS4_9, ICS6_9, IND560, IND690, IND890 and more

Model	DSO
Resolution	Approved: 1× 3,000e Single Range Non-approved: up to 15,000d (depending on the application/vibrations)
Capacity (kg) / Readability approved (g)	150/50 300/100
Dimensions (mm)	Weighing rail insert length: 200, 300, 400; Flexible adaptation plate
Scale Material	Hot galvanized
Protection	IP65
Interfaces	Scale interface: analog
Suitable Indicators	IND4_5, ICS4_9, ICS6_9, IND560, IND690, IND780, IND890 and more

DO | DSO

DW
Wall Scale

150 kg

IP67

The space-saving, compact wall scale is the ideal solution for weighing part loads or half carcasses. The hinged plate, casing and gallows hook are made from stainless steel to ensure compliance with stringent hygiene regulations.

Depending on the requirements of the installation wall, mounting kits are available. A bench stand is also available and an optional meat hook can be secured vertically in two different positions.

Resolution	Approved: 1× 3,000e Single Range
Capacity (kg) / Readability approved (g)	150/50
Dimensions (mm)	Plate size: 600×400
Scale Material	Finish on visible surfaces: Stainless steel (AISI 304) / Finish hinged plate support/internal frame: Hot galvanized
Protection	IP67
Interfaces	Scale interface: IDNet, analog
Accessories	Dowel installation kit; Screw-through mounting kit; Gallows with meat hook; Bench stand; IDNet cable accessories
Suitable Indicators	IND4_5, ICS4_9, ICS6_9, IND560, IND690, IND780, IND890 and more

www.mt.com/overhead-monorail
www.mt.com/wall-scale

The Correct Shade
From the Start

The BBA242paint and BBA242form make it possible to mix components in predefined portions by weighing. The BBA242paint offers simple functionality while an RS232 interface allows the scale to be connected to a paint-mixing system, a printer, a computer or an auxiliary display. The BBA242form brings a new level of functionality into the paint shop. An easy interface allows you to download up to 20 formulas from a PC and the large back-lit LCD display with graphic capability guides you through your paint mixes with ease.

BBA242
Paint Scales

7.1 kg

Rugged and dependable scale for mixing automotive refinishing paints.

	BBA242paint	BBA242form
Resolution	7,100e / 71,000d	71,000d
Capacity (kg)	7.1	7.1
Readability (g)	0.1 (0.05 g up to 999 g)	0.1 (0.05 g up to 999 g)
Dimensions (mm)	332 x 330, Platform Ø: 232	332 x 330, Platform Ø: 232
Display	Backlit graphic LCD, 192 x 64 pixel	Backlit graphic LCD, 192 x 64 pixel
Keypad	7 function keys	7 function keys
Housing	Cast aluminum	Cast aluminum
Platform	Stainless steel	Stainless steel
Protection	IP54	IP54
Interfaces	RS232, connectable to various color mixing systems	RS232, connectable to various color mixing systems
Power	120/230 V AC power supplies available for safe or hazardous area applications	120/230 V AC power supplies available for safe or hazardous area applications
Applications	General weighing	General and formula weighing in hazardous areas
Accessories	Protective cover and USB adapter	Protective cover and USB adapter
Ambient temperature range	0°C to +40°C	0°C to +40°C
Hazardous area approval	**BBA242x paint:** ATEX: II 2 G Ex ib IIB T4; IECEx: Ex ib IIB T4; FM: IS Class I Div 1, Groups C & D T4; CSA: IS Class I, Div 1 Group C & D T4	**BBA242x form:** ATEX: II 2 G Ex ib IIB T4; IECEx: Ex ib IIB T4; FM: IS Class I Div 1, Groups C & D T4; CSA: IS Class I, Div 1 Group C & D T4
	BBA242xx paint: ATEX: II 3 G Ex nL IIB T4 IECEx: Ex nL IIB T4	**BBA242xx form:** ATEX: II 3 G Ex nL IIB T4 IECEx: Ex nL IIB T4

ADT645
Paint Formulation System

The ADT645 paint formulation system is a full color touchscreen remote display and keyboard. It allows the user to access paint formulation information within the hazardous area.

The touch-sensitive display mirrors the information on the office PC. The PC itself must be installed in a safe area and connected via the ADT645 Interface. With a large color display formulation data can be accessed right from the touch display or the full size keyboard. It is solvent resistant and comes standard in a stainless steel housing. The stainless steel housing can easily be cleaned. The ADT645 works with all standard PCs and is compatible with all paint and office software packages.

Direct scale integration
Our intrinsically safe BBA242x scales can be connected directly to the ADT645.
You can choose between a standard scale with or without display.

True industrial design
The ADT645 is simple to install and works with all standard PCs. It has been developed for the ruggedness of the automotive body shop environment.

Hazardous area approval	**Display**
	ATEX: II 1G Ga Ex ma ia IIV T5 (0°C≤Ta≤40°C)
	Interface
	ATEX: II (1) G (Ga) [Ex ia] IIB
	Display
	FM: S-IS Class I, Div 1, Groups C,D T5 Ta=0°C to 40°C
	Interface
	FM: AIS Class I, Div 1, Groups C,D Ta=-20°C to 40°C

Weighing from Light to Heavy

Our wide range of weighing platforms offers a solution for every application, environment and accuracy requirement.

Our industrial bench scale weighing range starts with 3 kg and goes all the way up to 12,000 kg. Carbon steel or stainless steel construction, as well as IP65-protected load cells, hermetically sealed load cells or high-precision MonoBloc® load cells are available. In addition to the standard weights and measures tests, most of our scales also undergo lifecycle tests, shock tests and overload tests. With this we want to ensure that our customer always get a high-quality product from us that the applications and requirements. The METTLER TOLEDO family of weighing platforms support long-term profitability in your production area, which each scale tailored to your application, weight range, available space and work environment.

K Line
For Highest Accuracy

3–300 kg

IP67

IP66

With its hybrid design of electromagnetic force compensation load cell combined with a lever system, the K Line guarantees maximum precision with up to 32,000e (verification scale interval) and sets comprehensively high standards for industrial weighing. Linearity, repeatability and corner load are excellent. Thanks to the high level of protection (IP66/67) and optional stainless-steel models, the scales are very versatile.

Resolution e = 10d 15,000e/32,000e HR*	Capacity						
	3 kg	6 kg	15 kg	32 kg	60 kg	150 kg	300 kg
Platform Size (mm)							
A 280×350 [1]	0.01 g	0.02 g	0.1 g	0.1 g			
B 400×500					1 g		
CC 600×800						1 g	2 g**
Optional	up to 320,000d						

[1] KA3/KA6 with reduced weighing area 200×200 mm
* HR = High Resolution
** KCC300, e=d, 1× 6,000e SR

Scale Material	Stainless steel (spec. sizes: powder coated)
Load Plate Material	Standard: AISI 304, Option: AISI316
Protection	IP66/67
Scale Interface	IDNet
Accessories	Bench stand, Pillar support, Scale support, Roller track, IDNet- cable accessories
Hazardous Area Approval	**K Line:** ATEX: Cat 3GD
	Kx-T4: ATEX: Cat 2GD; USA/FM; Canada/CSA; Japan/TIIS; Russia/GOST-R; China/NEPSI
Suitable Indicators	**Safe Area:** ICS4_9, ICS6_9, IND560, IND690, IND780, IND890
	Cat 3GD*: IND560, IND690xx, IND780
	Cat 2GD*: ICS466x, IND560x

* please see "Hazardous Area Catalog"

M Line
Turning One Into Three

15–300 kg

IP67

The M Line, the multi-interval bench scale gives you three different resolutions in one scale.

With a lever mechanism linked to a digital strain-gauge load cell protected from water ingress, the M Line guarantees superlative accuracy with 3× 3,000e Multi Interval. It sets the standard for industrial weighing. The precision-level mechanism ensures superb linearity, repeatability and corner load. Outstanding IP67 protection and the availability of stainless models allow use in a wide variety of environments.

Resolution e1/e2/e3 3× 3,000e MI*	Capacity				
	15 kg	30 kg	60 kg	150 kg	300 kg
Platform Size (mm)					
A 280×350	1/2/5 g	2/5/10 g			
B 400×500			5/10/20 g		
CC 600×800				10/20/50 g	20/50/100 g
Optional	Up to 1× 7,500e, up to 150,000d				

* MI = Multi Interval

Scale Material	Stainless steel (spec. sizes: powder coated)
Load Plate Material	Standard: AISI 304, Option: AISI316
Protection	IP67
Scale Interface	IDNet
Accessories	Bench stand; Pillar support; Scale stand; Roller track; IDNet cable accessories
Hazardous Area Approval	ATEX: Cat 3GD
Suitable Indicators	**Safe Area:** ICS4_9, ICS6_9, IND560, IND690, IND780, IND890 **Cat 3GD*:** IND560, IND690xx, IND780

* please see "Hazardous Area Catalog"

Maximum Ruggedness

Bench platforms feature built-in strain-gauge technology with a resolution up to 30,000d. The robust weighing for rugged industrial applications offer IP67 protection, and they are qualified for safe and hazardous areas.

DB/DCC
Where Linearity Counts

30–300 kg

IP67

The products DB_s/DCC_s are available in sizes of 400 × 500 mm and 600 × 800 mm. Weighing ranges span from 30 to 300 kg at a verifiable resolution of 1 × 3,000e. The scale's hybrid construction of analog strain-gauge load cells coupled with a lever system guarantees good linearity and corner-load tolerances.

The stainless-steel weighing platform, in combination with the encapsulated load cell, are suitable for permanent use in wet areas. All standard models are approved for operation in hazardous areas of zone 2/22. The DB/DCC..sx version can be used in zone 1/21.

Resolution e 3,000e SR*	Capacity			
	30 kg	60 kg	150 kg	300 kg
Platform Size (mm)				
B 400 × 500	10 g	20 g		
CC 600 × 800			50 g	100 g
Optional	up to 30,000d			

* SR = Single Range

Scale Material	Stainless steel
Load Plate Material	Stainless steel
Protection	IP67
Scale Interface	IDNet, analog
Accessories	Bench stand; Pillar support; Scale support; Roller Track; IDNet cable accessories
Hazardous Area Approval	**DB/DCC:** ATEX: Cat 3GD **DB/DCCx:** ATEX: Cat 2GD
Suitable Indicators	**Safe Area:** ICS4_9, ICS6_9, IND560, IND690, IND780, IND890 and more **Cat 3GD*:** IND560, IND690xx, IND780 **Cat 2GD*:** IND226x, ICS466x, IND560x

* Please see "Hazardous Area Catalog"

EHEDG NSF GMP

Easy cleaning and handling together with a hermetically sealed stainless steel load cell (IP68/69k) set new standards in food and chemical/pharmaceutical industries.

PBA430(x)
Top Hygienic Design

3 – 600 kg

With their stainless steel construction designed for optimal cleanability, the PBA430(x) weighing platforms give contamination and corrosion no chance, making the scales ideal for use in hygienically sensitive areas with HACCP requirements and when working to GMP. Their hermetically sealed stainless-steel load cell (IP68/69k) for hazardous areas of Cat 2GD – resp. Cat 3GD – sets new standards in chemical/pharmaceutical industries.
The optional KS+ coating of the load cell [1] with the optional load plate of high-alloy stainless steel (AISI316), are available for each weighing platform and defend against corrosion.

[1] KS+ coating for all sizes except BC, CC, QC

Res. e1/e2 2× 3,000e MR*	Capacity							
	3 kg	6 kg	15 kg	30 kg	60 kg	150 kg	300 kg	600 kg
Platform Size (mm)								
A 240×300	1 g	1/2 g	2/5 g					
BB 300×400				5/10 g	10/20 g			
B 400×500				5/10 g	10/20 g	20/50 g		
BC 500×650					10/20 g	20/50 g	50/100 g	
CC 600×800					10/20 g	20/50 g	50/100 g	100/200 g
QA 229×229		1/2 g						
QB 305×305			2/5 g	5/10 g	10/20 g			
QC 457×457					10/20 g	20/50 g		
Optional	up to 30,000d							

* MR = Multi Range; 3 kg platform as Single Range 1x3000e

Scale Material	Base-/load frame: AISI304 – e-polished (except 600×800 mm)
Load Plate Material	Standard: AISI304; Option: AISI316
Protection	Analog: IP68/69k; IDNet: IP67
Scale Interface	**PBA430:** IDNet, analog; **PBA430x:** analog
Accessories	Bench stand; Roller Track; Pillar support; Scale stand; IDNet cable accessories
Hazardous Area Approval	**PBA430:** ATEX: Cat 3GD **PBA430x:** ATEX: Cat 2GD
Suitable Indicators	**Safe Area:** ICS4_9, ICS6_9, IND560, IND690, IND780, IND890 and more **Cat 3GD*:** IND560, IND690xx, IND780 **Cat 2GD*:** IND226x, ICS466x, IND560x

* Please see "Hazardous Area Catalog"

PBA655
For High-Precision Applications

6–600 kg

IP65

The PBA655 robust and rugged platform series is designed for durability and dependability. It features an exclusively tailored METTLER TOLEDO load cell and an approvable resolution of OIML 6,000e. This provides optimal weighing and counting precision while still being cost effective.

This platform series is IP65 approved and the perfect choice for harsh dry and dust-contaminated working environments such as in receiving, inspection, manufacturing, warehousing, packaging and shipping.

Resolution e 6,000e SR*	Capacity						
	6 kg	12 kg	30 kg	60 kg	120 kg	300 kg	600 kg
Platform Size (mm)							
A 240×300	1 g	2 g					
BB 300×400			5 g	10 g			
B 400×500				10 g	20 g		
BC 500×650				10 g	20 g	50 g	
CC 600×800				10 g	20 g	50 g	100/200 g**
Optional	up to 60,000d						

* SR = Single Range   ** Multi Range

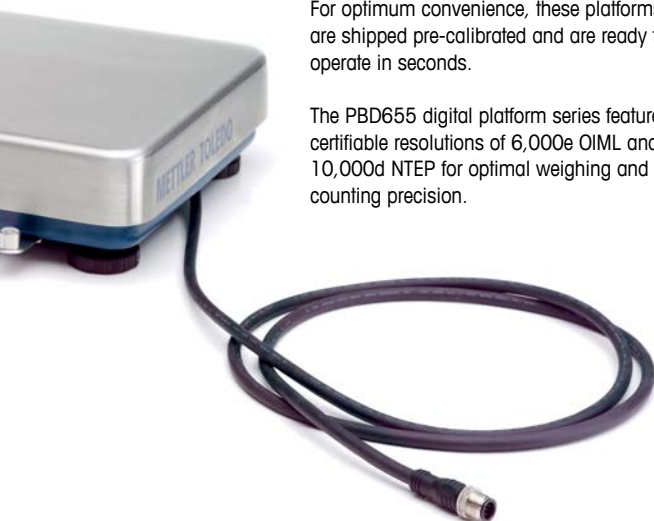| Scale Material	Base/Load frame: partly galvanized, powder-coated
Load Plate Material	Stainless steel
Protection	IP65
Scale Interface	IDNet, analog
Accessories	Columns, Pillar support, Scale stands and carts, Roller and ball tops, IDNet cable accessories
Suitable Indicators	ICS4_5, ICS685, ICS4_9, ICS6_9, IND560, IND690, IND780, IND890 and more

PBD655
For Uncompromised Reliability

6–600 kg

IP65

The PBD655 extremely robust and rugged platform series is a true digital device designed for simplicity and dependability. It is IP65 approved and the perfect choice for dry and dust-contaminated working environments such as receiving, inspection, manufacturing, warehousing, packaging and shipping.

For optimum convenience, these platforms are shipped pre-calibrated and are ready to operate in seconds.

The PBD655 digital platform series feature certifiable resolutions of 6,000e OIML and 10,000d NTEP for optimal weighing and counting precision.

Resolution e 6,000e SR*	Capacity						
	6 kg	12 kg	30 kg	60 kg	120 kg	300 kg	600 kg
Platform Size (mm)							
A 240×300	1 g	2 g					
BB 300×400			5 g	10 g			
B 400×500				10 g	20 g		
BC 500×650				10 g	20 g	50 g	
CC 600×800				10 g	20 g	50 g	100/200 g**
Optional	up to 60,000d						

* SR = Single Range   ** Multi Range

Scale Material	Base/Load frame: partly galvanized, powder-coated
Load Plate Material	Stainless steel
Protection	IP65
Scale Interface	RS422 (SICSpro)
Accessories	Columns, Scale stands and carts, Roller and ball tops, Extension cables
Suitable Indicators	ICS4_5, ICS685, IND890

PBA226,
PBA426 & PBA429 –
PBA426x & PBA429x
Highest Flexibility

3–150 kg

IP65

IP67

IP68

IP69k

Designed according to hygienic standards, these stainless steel platform series offer fast and easy cleaning. Due to the different high end load cell technologies used in the various series, protection degrees from IP65 up to IP68/IP69k are available.

The PBA226, PBA426(x) and PBA429(x) stainless steel platform series are robust, durable and economical. They offer solutions for a wide range of weighing tasks and applications.

PBA226 models features a specially designed aluminum load cell for any light-duty wet application.
PBA426(x) models features a potted stainless steel load cell built around the latest strain gage technology with improved resistance against the impact of water & humidity.
PBA429(x) models features an advanced welded, hermetically sealed load cell for any application in wet and harsh environments. The PBA429x and PBA426x series are ATEX & FM approved versions.

Res. E1 1× 3,000e	Capacity					
	3 kg	6 kg	15 kg	30 kg	60 kg	150 kg
Platform Size (mm)						
A 240×300	1 g	2 g	5 g			
BB 300×400				10 g	20 g	
B 400×500				10 g	20 g	50 g*
QA 229×229		2 g				
QB 305×305			5 g	10 g	20 g	
QC 457×457					20 g*	50 g*
Optional	up to 15,000d					

* only available for the PBA226 models

Scale Material	Platform Frame: Electro-polished stainless steel (1.4301 / AISI304)
Load Plate Material	Brushed stainless steel (1.4301 / AISI304)
Protection	**PBA226:** IP65 **PBA426:** IP65/IP67 **PBA429:** IP68/IP69k
Scale Interface	Analog
Accessories	Hygienic-Kit
Hazardous Area Approval	**PBA426x:** ATEX: Cat2GD / I.S. Class I, II, III, Division 1 **PBA429x:** ATEX: Cat2GD / I.S. Class I, II, III, Division 1
Suitable Indicators	**Safe Area:** IND23_, ICS4_5, IND560, IND690, IND780, IND890, ICS4_9, ICS6_9 **Hazardous Area:** IND226x, ICS466x, IND560x

▶ **www.mt.com/bench-scales**

Floor/Pit Scales
Designed for Your Environment

All our analog weighing platforms can be combined with any METTLER TOLEDO weighing terminal to fit your application. For higher accuracy and more flexibility, our K and M platforms use the IDNet interface to communicate weighing results. Minimize your installation times, increase your flexibility and make the most of the advantages of a digital IDNet scale interface. Simply connect and weigh.

K Line
For Highest Accuracy

300 – 3,000 kg

IP67

IP66

This hybrid design, combining an electromagnetic force compensation cell with a lever system, offers maximum accuracy with up to 6,000e/7,500e. These scales set the highest standards for all aspects of industrial weighing. Their linearity, repeatability and corner load are all that could be desired, and the impressive (IP66/67) protection plus the option of stainless steel makes them very versatile.

Resolution e 6,000e / 7,500e SR*	Capacity			
	300 kg	600 kg	1,500 kg	3,000 kg
Platform Size (mm)				
CS 800 × 800	2 g**	10 g**		
C 1,000 × 800	2 g**	10 g**		
D 1,250 × 1,000		10 g**	20 g**	
E 1,500 × 1,250			20 g**	50 g**
ES 1,500 × 1,500			20 g**	50 g**
Optional	3 × 3,000e Multi Interval, up to 300,000d			

*   SR = Single Range
** Standard setting ex-works

Scale Material	Stainless steel, hot galvanized (depending on scale model)
Load Plate Material	Stainless steel, hot galvanized (depending on scale model)
Protection	IP66/67
Scale Interface	IDNet
Accessories	Load plates; Pit frames; Ramps; IDNet cable accessories
Hazardous Area Approval ⚠ EX	**K:** ATEX: Cat 3GD **Kx-T4:** ATEX: Cat 2GD, USA/FM; Canada/CSA; Japan/TIIS; Russia /GOST-R; China/NEPSI
Suitable Indicators	**Safe Area:** ICS4_9, ICS6_9, IND560, IND690, IND780, IND890 **Cat 3GD*:** IND560, IND690xx, IND780 **Cat 2GD*:** ICS466x, IND560x

* Please see "Hazardous Area Catalog"

M Line
Turn One into Three

300 – 3,000 kg

IP67

M Line, the Multi Interval floor scale, gives you three different resolutions in one scale. Its lever construction combined with a strain-gauge load cell protected against water ingress, helps guarantee first-class precision with 3× 3,000e Multi Interval. The precision lever mechanism also ensures superb linearity, repeatability and corner load. IP67 protection and the stainless option allow use in a wide variety of situations.

Resolution e1/e2/e3 3× 3,000e MI*	Capacity			
	300 kg	600 kg	1,500 kg	3,000 kg
Platform Size (mm)				
CS 800×800	20/50/100 g	50/100/200 g		
C 1,000×800	20/50/100 g	50/100/200 g		
D 1,250×1,000		50/100/200 g	100/200/500 g	
E 1,500×1,250			100/200/500 g	200/500/1000 g
ES 1,500×1,500			100/200/500 g	200/500/1000 g
Optional	Up to 150,000d			

* MI = Multi Interval

Scale Material	Stainless steel, hot galvanized (depending on scale model)
Load Plate Material	Stainless steel, hot galvanized (depending on scale model)
Protection	IP67
Scale Interface	IDNet
Accessories	Load plates; Pit frames; Ramps; IDNet cable accessories
Hazardous Area Approval	ATEX: Cat 3GD
Suitable Indicators	**Safe Area:** ICS4_9, ICS6_9, IND560, IND690, IND780, IND890 **Cat 3GD*:** IND560, IND690xx, IND780

* Please see "Hazardous Area Catalog"

Designed to Save You Money

From simple pit through low-profile and palette scales to platforms with hinged load plate, we offer everything you need to streamline and simplify your operation. Special accessories such as approach ramps, installation frames, lifting system, pit frames or options such as high quality stainless steel, high resolution/high-quality load cells, grind surface, allow full customization for your facility.

IP68

Easy to Clean & Hazardous Approval

PFA579lift/PFA579xlift PFA779lift
Floor/Pit Scales with Raisable Load Plate

PFA579(x)lift – solid and reliable   PFA779lift – for sanitarily sensitive areas

300 – 3,000 kg

Excellent metrology combined with high reliability, robustness and easy handling is the key feature of the PFA579(x)lift/PFA779lift floor scales.

The PFAx79lift floor scales are designed with an easy-raise load plate, which allows the scales to be opened and cleaned efficiently and effectively.

The PFA579(x)lift floor scale is considered appropriate for all-around use, the PFA779lift focuses on hygienically sensitive areas and is designed to meet all up-to-date hygienic standards and guidelines.

With a wide range of options and accessories, the PFA579(x)lift and PFA779lift floor scales can be adapted to your needs.

Resolution e 3,000e SR*	Capacity			
	300 kg	600 kg	1,500 kg	3,000 kg
Platform Size (mm)				
DS 1,000 × 1,000	100 g	200 g	500 g	–
D 1,250 × 1,000	100 g	200 g	500 g	1,000 g
E 1,500 × 1,250	100 g	200 g	500 g	1,000 g
ES 1,500 × 1,500	100 g	200 g	500 g	1,000 g
Free Sizes	800 x 800 – 1,500 x 1,500 mm (bigger sizes on request)			
Optional	2 × 3,000e Multi Range, 3 × 3,000e Multi Range, 2 × 3,000e Single Interval, 1 × 6,000e Single Range, up to 30,000d			

* SR = Single Range

Scale material	Stainless steel (AISI304), option: AISI316
Load plate material	Stainless steel (AISI304), option: AISI316 Surface: smooth, pattern or grind (Ra<1µm)
Protection	IP68
Scale interface	IDNet, analog
Accessories	Ramp, Pit Frame, Foot plates, Installation Frame, IDNet cable accessories
Hazardous Area Approval ⚠️ EX	**PFA579lift:** ATEX: Cat 3GD **PFA579xlift:** ATEX: Cat 2GD **PFA779lift:** ATEX: Cat 3GD
Suitable indicators	**Safe Area:** IND4_5, ICS4_9, ICS6_9, IND560, IND690, IND780, IND890 and more **Cat 3GD*:** IND560, IND690xx, IND780 **Cat 2GD*:** IND226x, ICS466x, IND560x

* Please see "Hazardous Area Catalog"

PFA574/PFA575/PFA579
The Workhorse

IP68

IP65

This rugged platform is the reliable partner for your weighing applications. Mounted directly on adjusting feet, the platform can be easily placed on the floor or installed into prepared pit frames. Due to its unique RockerFoot design, you have a full floating platform. This ensures long-lasting, excellent metrological characteristics. A wide range of options and accessories results in a high flexible and versatile product range, that fits your requirements.

Resolution e 3,000e SR*	Capacity			
	300 kg	600 kg	1,500 kg	3,000 kg
Platform Size (mm)				
DS 1,000×1,000	100 g	200 g	500 g	–
D 1,250×1,000	100 g	200 g	500 g	1,000 g
E 1,500×1,250	100 g	200 g	500 g	1,000 g
ES 1,500×1,500	100 g	200 g	500 g	1,000 g
G 2,000×1,500	100 g	200 g	500 g	1,000 g
Free Sizes	700×400… 2,000×1,500			
Optional	2× 3,000e Multi Range, 3× 3,000e Multi Range, 2× 3,000e Multi Interval, 1× 6,000e Single Range, up to 30,000d			

* SR = Single Range

Scale Material	**PFA574:** painted, **PFA575:** hot galvanized, **PFA579:** stainless steel (AISI304 or AISI316)
Load Plate Material	**PFA574:** painted, **PFA575:** hot galvanized, stainless steel, **PFA579:** stainless steel (AISI304 or AISI316) surfaces: smooth, pattern or grind (R_a<1µm)
Protection	**PFA574:** IP65; **PFA575:** IP68; **PFA579:** IP68
Scale Interface	IDNet, analog
Accessories	Ramps, Pit frame Quick Pit, Load plate, Foot plates, Installation frame; IDNet cable accessories
Hazardous Area Approval	**PFA574:** Safe area; **PFA575:** ATEX: Cat 3GD; **PFA575x:** ATEX: Cat 2GD; **PFA579:** ATEX: Cat 3GD; **PFA579x:** ATEX: Cat 2GD
Suitable Indicators	**Safe Area:** IND4_5, ICS4_9, ICS6_9, IND560, IND690, IND780, IND890 and more **Cat 3GD*:** IND560, IND690xx, IND780 **Cat 2GD*:** IND226x, ICS466x, IND560x

* Please see "Hazardous Area Catalog"

PUA57_ Low Profile Scales

When passage height is low and simple cleaning required, a conventional pit frame scale may not be an option. The PUA57_ range of low profile scales by METTLER TOLEDO offers versatile solutions for your varied applications.

PUA574 / PUA579(x)
for Use in Many Different Industries

300 – 1,500 kg

IP68

IP65

- **PUA579** – the stainless steel hygienic version
- **PUA579x** – suitable for the hazardous area zone 1/21
- **PUA574** – the mild steel version for dry areas

When height matters
The overall height of 35 resp. 45 mm makes the PUA57_ low profile scales ideal for floor installations with ramps.

Outstanding metrology for effective cleaning
The PUA579 low-profile scales are characterized by an easy-to-clean, EHEDG friendly and GMP compliant design, which prevents potential sources of contamination.

Highest flexibility for individual needs
Adapt the platform to your individual needs. The platforms are highly configurable.

Resolution e 3,000e SR*	Capacity		
	300 kg	600 kg	1,500 kg
Platform Size (mm)			
CS 850×850 (EHEDG)	100 g	200 g	–
E 1,500×1,250	100 g	200 g	500 g
Free Sizes	750×400 … 1,500×1,500 (length × inner width)		
Optional	2×3,000e Multi Range, 3×3,000e Multi Range, 2×3,000e Multi Interval, 1×6,000e Single Range, up to 30,000d		

* SR = Single Range

PUA574

PUA579

Scale Material	**PUA574**: painted; **PUA579**: stainless steel AISI304; Option: stainless steel AISI316, grind surface (R_a <1µm)
Protection	**PUA574:** IP65; **PUA579:** IP68
Scale Interface	IDNet, analog
Accessories	Ramps, Foot plate set with stop, Installation frame, Passage stop, IDNet cable accessories
Hazardous Area Approval	**PUA574:** Safe area **PUA579:** ATEX: Cat 3GD **PUA579x:** ATEX: Cat 2GD
Suitable Indicators	**Safe Area:** IND4__, ICS6__, IND560, IND690, IND780, IND890 and more **Cat 3GD*:** IND560, IND690xx, IND780 **Cat 2GD*:** IND226x, ICS466x, IND560x

* Please see "Hazardous Area Catalog"

PUA579(x) with Lifting Device
For Hygienic Applications Requiring Thorough Cleaning

300 – 1,500 kg

IP68

Is systematic cleaning a key factor in your manufacturing process? The PUA579(x) platform with lifting device solves your problem. With only a few hand movements and a minimum amount of physical effort you can raise a PUA579(x) in an upright position.

This special design provides decisive advantages, it:

- Reduces your downtime for cleaning
- Increases your productivity
- Guarantees the safety of your employees

PUA579 with lifting device, approach ramp and IND690 terminal

Resolution e 3,000e SR*	Capacity		
	300 kg	600 kg	1,500 kg
Platform Size (mm)			
CS 850×850 (EHEDG)	100 g	200 g	–
E 1,500×1,250	100 g	200 g	500 g
Free Sizes	Inner width: 850, 1,000, 1,250 mm		
Optional	2×3,000e Multi Range, 3×3,000e Multi Range, 2×3,000e Multi Interval, 1×6,000e Single Range, up to 30,000d		

* SR = Single Range

|	
Scale Material	**PUA579 with lifting device**: stainless steel AISI304; Option: stainless steel AISI316, grind surface (R$_a$<1µm)
Protection	IP68
Scale Interface	IDNet, analog
Accessories	Ramps, Foot plate set with stop, Installation frame, Passage stop, IDNet cable accessories
Hazardous Area Approval ⚠️EX	**PUA579 with lifting device:** ATEX: Cat 3GD **PUA579x with lifting device:** ATEX: Cat 2GD
Suitable Indicators	**Safe Area:** IND4__, ICS6__, IND560, IND690, IND780, IND890 and more **Cat 3GD*:** IND560, IND690xx, IND780 **Cat 2GD*:** IND226x, ICS466x, IND560x

* Please see "Hazardous Area Catalog"
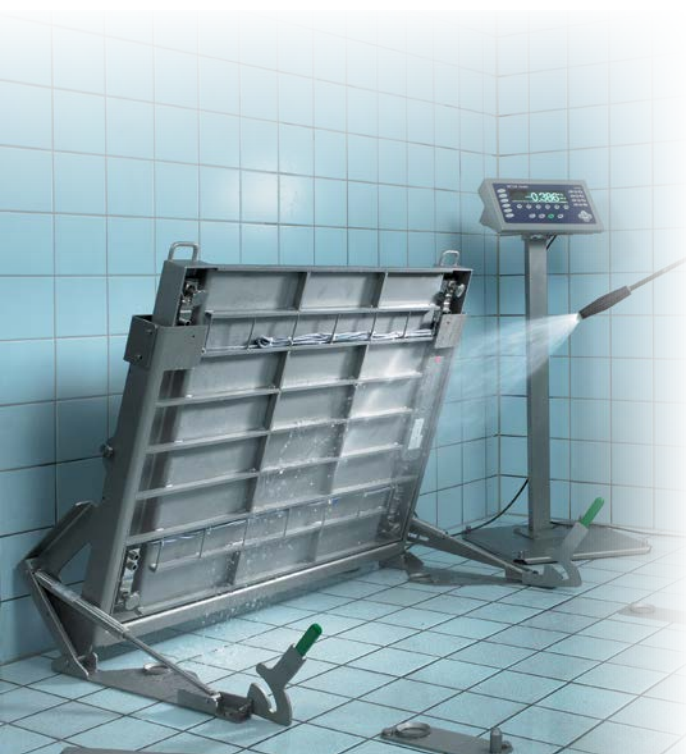
PUA579(x)mobile
Mobile Use with Maximum Flexibility

300 – 1,500 kg

IP68

Use the PUA579mobile for weighing at different stations or just shift the scale to the side during cleaning. Benefit from the mobility of this scale. Our focus is on the simple and riskless handling during lifting, lowering and shifting of the complete PUA579mobile scale with a very low physical effort. Your safety really matters to us. The construction of the PUA579mobile enables easy cleaning and also the use of particularly critical areas in pharmaceutical industries. The mobile version is available for the complete product portfolio of PUA579 and PUA579x low-profile scales.

A five-star weighing platform, thanks to two main features:

• Space savings: It can be pushed aside easily whenever it is not needed
• Cost savings: Reduce your inventory and use the PUA579mobile at different places

PUA579(x)mobile

Resolution e 3,000e SR*	Capacity		
	300 kg	600 kg	1,500 kg
Platform Size (mm)			
CS 850×850 (EHEDG)	100 g	200 g	–
E 1,500×1,250	100 g	200 g	500 g
Free Sizes	750×400 … 1,500×1,500 (length × inner width)		
Optional	2×3,000e Multi Range, up to 30,000d		

* SR = Single Range

Scale Material	**PUA579(x)mobile**: stainless steel AISI304
Protection	IP68
Scale Interface	IDNet, analog
Accessories	Ramps, Foot plate set with stop, Installation frame, Passage stop, IDNet cable accessories
Hazardous Area Approval ⚠️ EX	**PUA579mobile:** ATEX: Cat 3GD **PUA579xmobile:** ATEX: Cat 2GD
Suitable Indicators	**Safe Area:** IND4_5, ICS4_, ICS6_, IND560, IND690, IND780, IND890 and more **Cat 3GD*:** IND560, IND690xx, IND780 **Cat 2GD*:** IND226x, ICS466x, IND560x

* Please see "Hazardous Area Catalog"

PTA455 / PTA459
Pallet Scales

300 – 3,000 kg

PTA455/PTA459 – the pallet scales for goods receiving and shipping, manufacturing and packaging. These rugged and reliable pallet scales are made of mild steel/hot galvanized or stainless steel. A wide range of options and accessories helps to meet your requirements. Let us find the right solution for your application.

IP68

IP65

Resolution e 3,000e SR*	Capacity			
	300 kg	600 kg	1,500 kg	3,000 kg
Platform Size (mm)				
1,260 × 600	100 g	200 g	500 g	1,000 g
Free Sizes	500 × 450 … 1260 × 1000 (length × inner width)			
Optional	2 × 3,000e Multi Range, 3 × 3,000e Multi Range, 2 × 3,000e Multi Interval, 1 × 6,000e Single Range, up to 30,000d			

* SR = Single Range

Scale Material	**PTA455:** Hot galvanized; **PTA459:** Stainless steel, AISI304. Option: Stainless steel AISI316, grind surface (R_a < 1 µm)
Protection	**PTA455:** IP65; **PTA459:** IP68
Scale Interface	IDNet, analog
Accessories	Load plate; Leg widener; Wheel set; Handle; IDNet cable accessories
Hazardous Area Approval	**PTA455:** Safe area
	PTA459: ATEX: Cat 3GD
	PTA459x: ATEX: Cat 2GD
Suitable Indicators	**Safe Area:** IND4_5, ICS4_9, ICS6_9, IND560, IND690, IND780, IND890 and more
	Cat 3GD*: IND560, IND690xx, IND780
	Cat 2GD*: IND226x, ICS466x, IND560x

* Please see "Hazardous Area Catalog"

DRF / DSF
Heavy Capacity

3,000 – 12,000 kg

These heavy-capacity weighing platforms, equipped with strain-gauge load cells, are suitable for weights up to 12,000 kg. By connecting up to 3 modules, weighing surfaces of at least 1 × 1 m up to 2 × 6 m can be realized according to the customer's needs. The heavy capacity platforms can be chosen alternatively as black painted stainless steel and can be used in dry and wet areas. We can also customize weighing platforms to meet your special requirements when our standard scales and options are not enough.

IP68

Resolution e 3,000e / 6,000e SR*		Capacity		
		3,000 kg	6,000 kg	12,000 kg
Platform Size (mm)				
DRF 1,000 × 1,000 × 120 – 6,000 × 2,000 × 120	3,000e	1 kg	2 kg	
	6,000e	0.5 kg	1 kg	
DSF 1,000 × 1,000 × 150 – 6,000 × 2,000 × 150	3,000e	1 kg	2 kg	5 kg
	6,000e	0.5 kg	1 kg	2 kg
Optional	Up to 30,000d			

* SR = Single Range

Scale Material	**DRF/DSF:** Stainless steel, painted
	DRFx/DSFx: Stainless steel
Load Plate Material	**DRF/DSF:** Stainless steel, hot galvanized, painted
	DRFx/DSFx: Stainless steel, hot galvanized
Protection	IP68
Scale Interface	IDNet
Accessories	Pit frame; IDNet-cable accessories
Hazardous Area Approval	**DRF/DSF:** ATEX: Cat 3GD
	DRFx/DSFx: ATEX: Cat 2GD
Suitable Indicators	**Safe Area:** ICS4_9, ICS6_9, IND560, IND690, IND780, IND890
	Cat 3GD*: IND560, IND690xx, IND780
	Cat 2GD*: IND560x

* Please see "Hazardous Area Catalog"

www.mt.com/floor-scales

Precision Balances
Decision Table

This overview helps you identify which precision balance range best suits your needs.

XPE
Innovative technology ensures reliable and fully compliant results.

Capacity up to 64 kg

Readability 0.1 mg - 1 g

- **Unsurpassed Performance**
  Results up to 2x faster with improved repeatability

- **Touchless Safety**
  Color display, touchless operation for user safety

- **Ease of Compliance**
  StatusLight™ indicates ready and safe to weigh

- **Seamless Processes**
  LabX: auto data handling. Easy connection to LIMS, ERP, ELN

- **Robust and Reliable**
  Strong, chemical resistant, overload protection

- **Easy Cleaning**
  Easy-clean surfaces, weighing pan dishwasher proof

XS
High throughput is assured with these fast, high performance balances.

Capacity up to 64 kg

Readability 0.1 mg - 1 g

- **Excellent Performance**
  Results up to 2x faster even in harsh conditions

- **Ergonomic Operation**
  Easy viewing and good posture with ErgoStand™

- **Robust and Reliable**
  Strong, chemical resistant, overload protection

- **Seamless Processes**
  LabX: auto data handling, SOP guidance

- **Easy Cleaning**
  Easy-clean surfaces, weighing pan dishwasher proof

MS
Hardworking balances that give you fast and precise results.

Capacity up to 32.2 kg

Readability 1 mg – 1 g

- **Fast Results**
  MonoBloc cell, auto internal adjustment

- **Efficient Operation**
  Clear menu, built-in applications with SmartKey shortcut access

- **Robust Longevity**
  Full metal housing – tough and chemical resistant

- **Stable Protection**
  LevelLock feet for stability

1000 Balances.
4 Steps.
One Recommendation.

▶ **www.mt.com/easyfinder**

ML

These compact balances save space and can be battery operated.

Capacity up to 6,200 g

Readability 1 mg – 0.1 g

- **Reliable Results**
  MonoBloc cell,
  internal adjustment

- **Easy Operation**
  Clear menu, one key press
  access to applications

- **Durable Construction**
  Metal base with chemical
  resistant housing

- **Fully Portable**
  Lightweight, use batteries
  to weigh anywhere

ME

Quality entry level balances with reliable performance.
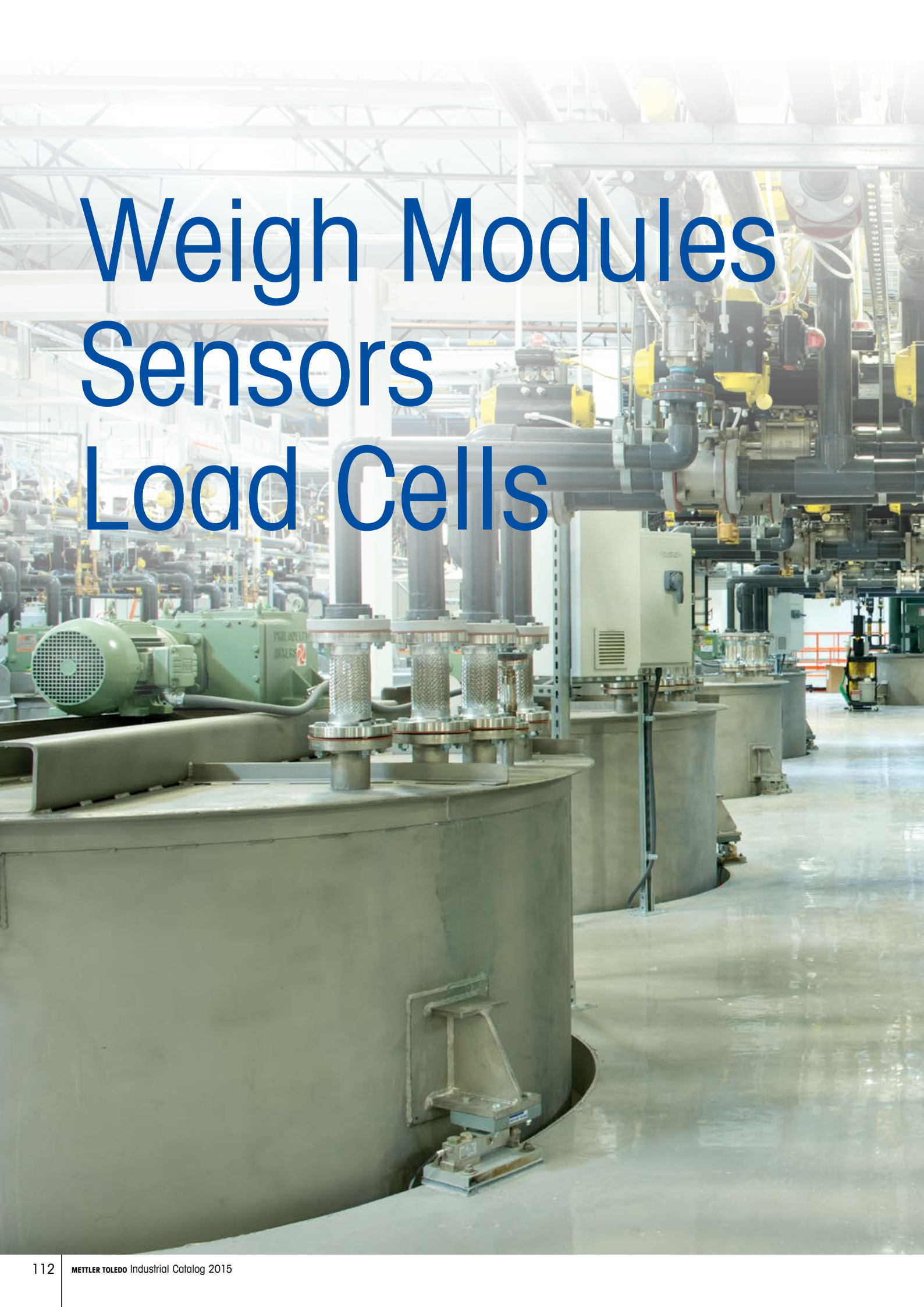
Capacity up to 4,200 g

Readability 1 mg / 0.01 g

- **Simply Reliable**
  Fast results,
  internal adjustment

- **Easy Operation**
  Clear menu, 10 applications,
  backlit display

- **Essential Functionality**
  Just what you need for your every-
  day tasks

Weigh Modules
Sensors
Load Cells

	Page

Tailor-Made for Automation
Easy to Integrate

Our high speed high precision weigh modules are tailored to the needs of machine and equipment manufacturers for simple electrical and mechanical integration. Standardized interfaces allow direct communication with control systems. These modules' proven ruggedness and the worldwide service network ensure reliable operation for many years.

WM-Ex Line
Precise, Fast, Rugged

WM-Ex weigh modules with built-in overload protection are used for fast weight control as well as filling and dispensing applications in automation. An IP44 rated double-labyrinth protects the weigh module against dust and spilled liquids during normal operation. The IP66 rated wash down option seals the weigh module during cleaning.

121–6100 g

Capacity	121 g – 6100 g
Readability	0.1 mg to 10 mg
Housing, baseplate	Stainless steel 1.4404 (316L)
Weighing platform	Aluminum, chrome plated
Protection	IP44 when weighing, IP66 with wash down feature
Interfaces	RS232 or RS422 available via ACM200, DeviceNet™, Profibus®, Profinet IO®, Ethernet/IP™ and CC-Link™ available with accessory
Accessories	Fieldbus modules and leveling bubble
Communication	Via ACM200 direct connection to PLC or control system
Hazardous area approvals	ATEX 95: II 2 G EEx ib IIC T4 FM: Class I, II, III, Division 1, Groups A–G, T4
Power Supply	APS768x 100/120/230 VAC

WMS Line
Even Easier to Integrate

120–6200 g

Easy to integrate due to its very slim design and off-center position of the weighing platform. Available with and without internal calibration.

Capacity	120 g – 6200 g
Readability	0.1 mg to 10 mg
Housing, baseplate	Stainless steel 1.4404 (316L)
Weighing platform	Aluminum, chrome plated
Protection	IP54 when weighing, IP66 with wash down feature
Interfaces	RS232 and RS422 available as standard, DeviceNet™, Profibus®, Profinet IO®, Ethernet/IP™ and CC-Link™ available with accessory
Accessories	Fieldbus modules, DIN-rail connection modules for control cabinet, cables
Communication	Direct connection to PLC or control system
Hazardous-area approvals	ATEX 95: II 3G Ex nA ic IIC T6 Gc

WMH Line
Direct Connection, Fast, Rugged

15–3000 kg

IP67

IP66

Speed, ruggedness, precision, high weighing capacity and direct connectivity are the key features of the WMH product range. High resolution in combination with a high capacity allow mounting of additional devices on top of the platform while maintaining a high weighing range. The WMH is used for fast weight control as well as automated filling, dispensing applications in automation. The WMH-Ex are specially designed weigh platforms for use in automated processes in hazardous environments.

Capacity	15 kg – 3,000 kg
Readability	0.1 g to 50 g
Platform dimensions	350 × 280 mm to 1,500 × 1,500 mm
Load plate material	Stainless steel, hot galvanized
Scale material	Stainless steel, powder coated, hot galvanized
Protection	IP66/IP67
Interfaces	RS232 and RS422 available as standard, DeviceNet™, Profibus®, Profinet IO®, Ethernet/IP™ and CC-Link™ available with accessory
Accessories	Fieldbus modules, DIN-rail connection modules for control cabinet, roller tracks, ramps, pit frames, cables
Communication	Direct connection to PLC or control system. WMH-Ex via ACM200
Hazardous area approvals	ATEX 95: II 2 G EEx ib IIC T4; II 2 D IP 66/67 T 55 °C FM: Class I, II, III, Division 1, Groups A–G, T4
Power Supply for hazardous area	APS768x 100/120/230 VAC

Fieldbus Modules
Connect to PLC and PC

Easily integrate your high resolution weigh module into your control system with METTLER TOLEDO Fieldbus Modules.

EtherNet/IP™	According to EN50325-2. 10/100 Mbits/s. Full IP address range. DHCP
DeviceNet™	According to EN50325-2. 125, 250 or 500 kbits/s MAC ID 0-63
Profibus® DP	Slave (DPVO) according to EN50170 9.6 kbits/s – 12 Mbits/s Address range 0 – 99
Profinet IO®	Slave according to IEC 61784 (CPF-3/3) 100 Mbits/s Full IP address range. DHCP
CC-Link™	Slave according to BTP-05026-D 156 kbits/s – 10 Mbits/s Address range: 1-64 (Basic Mode), 1-61 (Extended Mode)
Subnet Connection	RS232, RS422 and RS485, up to 57.6 kbits/s
Housing	Plastic housing with snap-on connection to DIN rail
Mounting	DIN rail
Protection	IP20

www.mt.com/APW

Weigh Modules
Ensure Safety

Compression Weigh Modules

Compression weigh modules enable the quick and safe conversion of a tank or conveyor system into a scale. Their high precision ensures that fill levels can be determined accurately, while dispensing and formulation control are also options. Built-in side load and lift up protection ensure that safety, performance and precision are maintained. Available in various versions depending on the application and environment, METTLER TOLEDO weigh modules are ideally tailored to meet your requirements.

Mechanical Safety Features:
All safety-related mechanical fixtures are present. Lift-protection and 360° horizontal stops withstand high wind and seismic forces. They also protect the weighing cell from overload. Optional stabilizers fix the tank and allow for high mixer torques and short stabilization times.

Models	SWB505 MultiMount, 0970 RingMount, SWC515 PinMount, 3390 GageMount	**Material**	**MultiMount:** Zinc plated, 304 stainless steel, 316 stainless steel
Max. Capacity	**MultiMount:** 5, 10, 20, 50, 100, 220, 300, 550 kg, 1.1, 2.2, 4.4 t		**RingMount:** 316 stainless steel
	RingMount: 250, 500 kg, 1, 2, 3.5, 5, 10 t		**PinMount:** Zinc plated, 304 stainless steel, 316 stainless steel
	PinMount: 7.5, 15, 22.5, 30, 50, 100 t		**GageMount:** Nickel plated or stainless steel
	GageMount: 200, 300 t	**Protection**	IP68, load cells stainless steel, welded
Resolution	OIML 3,000e, 6,000e, NTEP 5,000d, 10,000d (depending on model)	**Interfaces**	Analog 2 mV/V
OIML approval	C3, C4, C6 (depending on model)	**Applications**	**MultiMount:** Static tank weighing, mixers and conveyors with optional stabilizers
NTEP approval	NTEP IIIM 5,000d, 6,000d, IIIL 10,000d (depending on model)		**RingMount:** Hygienic applications in pharma and food sector
ATEX approval	Zone 1/2 and Zone 21/22 Hazardous Assessment EN13463-1		**PinMount:** Static tank weighing, mixers and conveyors with optional stabilizers
FM/cFM approval	Class I, II, III Div 1&2 Gagemount: Class I, II, III Div 1		**GageMount:** High capacity tank weighing
		Accessories	J-Boxes; Vibration and thermal isolation pads; Dummy load cells; Dead stands; Conduit adapters.

Model	SWS310 Tension Mount
Max. Capacity (kg)	50, 100, 250, 500, 1,000, 2,500, 5,000, 7,500, 10,000
Resolution	3,000e
OIML approval	C3 OIML
NTEP approval	II 3,000d, IIIL 10,000d
ATEX approval	Zone 0/1/2 and Zone 20/21/22
FM/cFM approval	Class I, II, III Div. 1&2
Material	SWS310/SLS410: nickel plated steel
	SWS310/SLS510: stainless steel
Protection	IP67
Interfaces	Analog 3 mV/V
Applications	Suspended hoppers; Mechanical lever scale conversions
Accessories	J-Boxes

Tension Weigh Modules

Tension weigh modules are designed for installation where suspended mounting is required. The ruggedly designed system tolerates the many adverse loading and environmental conditions commonly present in industrial weighing environments while still providing excellent accuracy.
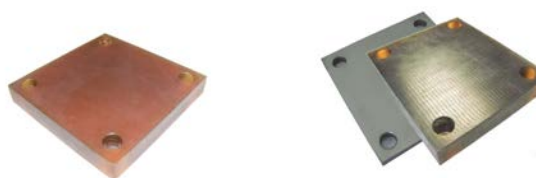
Accessory	Application
Thermal Pad	Hot tanks up to 170°C
Thermal Pad	Hot tanks up to 82°C
Damping Pad	Isolate from shock loads and vibration
Dead stand	Protect equipment in installation phase; For liquid level control indoors.
Dummy load cell	Protect equipment in installation phase; For liquid level control outdoors.
Spacer plate	Fix piping, no lift load cell exchange

Weigh Module Accessories

An extensive range of accessories for weigh modules allow for correct installation in harmful environmental conditions and increase lifetime and performance of the system.

www.mt.com/load-cells
www.mt.com/weigh-modules
www.mt.com/APW

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Diagnostics and Accuracy
PowerCell Weigh Modules

Weigh module systems using POWERCELL® load cells provide the ultimate in accuracy and reliability. The predictive diagnostics system monitors each load cell, alerting you to potential problems before they cause inaccurate weighing or downtime. The unique network increases reliability by eliminating failure-prone junction boxes.

Benefits Over Analog Systems:
- Single load-cell diagnostics for predictive failure detection
- No junction box for high reliability and fast installation
- Up to 10,000e OIML accuracy
- Calibration without weights

Mechanical Safety Features:
All safety-related mechanical fixtures are present. Life protection and 360° horizontal stops withstand high wind and seismic forces. They also protect the weighing cell from overload. Integrated drop-down protection ensures safety even in extreme cases. Two optional stabilizers fix the tank and allow for high mixer torques and short stabilization times.
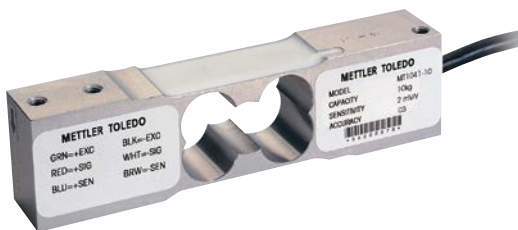
Model	SWB605 PowerMount, SWC515 PinMount PDX
Max. Capacity	220, 550 kg, 1.1, 2.2, 4.4, 20, 30, 50, 90 t
Resolution	3,000e, 6,000e, 10,000e, 5,000d, 10,000d
OIML approval	C3, C6, C10 OIML
NTEP approval	5,000d, 10,000d
ATEX approval	Zone 2 and 22 Hazardous Assessment EN13463-1
FM approval	Class I, II, III Div.2
Material	Zinc plated, 304 stainless steel, 316 stainless steel
Protection	IP68, IP69k load cell stainless steel, welded
Interface	POWERCELL®
Application	Superior tank and vessel weighing with diagnostic features
Accessories	Cables, vibration and thermal isolation pads, dead stands, spacer plates; stabilizers

A High Level of Accuracy

METTLER TOLEDO offers a wide range of single point load cells. They are typically used individually in small to medium-sized scales. Steel models are used when higher degrees of protection are required. The moment insensitive design guarantees a high level of accuracy even with eccentric load, providing an easy way of creating high-precision scales. The key features of the cells are ruggedness and a high level of reliability.

Aluminum: Single Point Load Cells

Models	MT1022, MT1041, MT1241, MT1260
Max. Capacity (kg)	**MT1022:** 3,5,7,10,15,20,30
	MT1041: 10, 15, 20, 30, 50, 75, 100
	MT1241: 30, 50, 100, 150, 200, 250
	MT1260: 50, 75, 100, 150, 200, 250, 300, 500, 750
Resolution	3,000e (**MT1241:** 3,500e)
OIML approval	C3 OIML R60
NTEP approval	III 5,000d
ATEX approval	Zone 1/2 and 21/22
Platform size (mm)	**MT1022:** 350×350; **MT1041:** 400×400
	MT1241: 400×400; **MT1260:** 600×600
Material	Aluminum, passivated
Protection	IP67, potted
Interfaces	Analog 2 mV/V
Applications	Bench scales; Floor scales; Process weighing

Steel: Single Point Load Cells

Models	SLP845, SSH, IL
Max. Capacity (kg)	**SLP845:** 15, 22, 50, 100, 200
	SSH: 50, 100, 200, 500, 1000
	IL: 150, 250, 500, 1,000, 2,000
Resolution	3,000e
OIML approval	C3 OIML R60, OIML 3,000e
Platform size (mm)	Up to 1,000×1,000
Material	**SLP845/SSH:** Stainless steel; **IL:** Nickel plated steel
Protection	**SLP845/SSH:** IP68, laser welded; **IL:** IP67
Interfaces	Analog 2 mV/V
Applications	Bench scales; Floor scales; Process weighing in food and pharma

For Heavy Loads: Canister / Ring Load Cells

Whether you are operating a truck, rail, or tank scale, inaccurate weights can cost you money. By ensuring that every weight is accurate, METTLER TOLEDO canister load cells help prevent lost income due to incorrect billing, customer complaints, and fines for overloading. Each load cell is compensated for external influences such as temperature changes, nonlinearity, hysteresis, and creep.

From 5 kg – 4.4 t: Beam Load Cells

METTLER TOLEDO beam load cells are available from 5 kg – 4.4 t. This type of construction provides an ideal combination of compact design and high weighing precision. To withstand the harsh industrial environment, models are available in a stainless-steel and fully welded version. This guarantees a high level of reliability and operational safety. All listed beam load cells have the major approvals OIML, NTEP and Ex certification ATEX, FM as standard, considerably simplifying your logistics.

Models	RLC, SLC610, 0782, POWERCELL® PDX®
Max. Capacity (t)	**RLC:** 0.25, 0.5, 1, 2.2, 10
	SLC610: 7.5, 15, 22.5
	0782: 20, 30, 50, 100, 200, 300
	POWERCELL® PDX®: 20, 30, 50, 90
Resolution	3,000e – 6,000e, 10,000d (depending on model)
OIML approval	C3 OIML R60
	Option C4, C5, C6 OIML R60 (depending on model)
NTEP approval	NTEP IIIL 10,000d
ATEX approval	Zone 1/2 and Zone 21/22 (depending on model)
FM/cFM approval	Class I, II, III, Div. 1 (depending on model) RLC: Class I, II, III, Div 1&2
Material	Stainless steel
Protection	IP68, laser welded; POWERCELL® PDX® and POWERCELL®: IP68/IP69k, glass to metal
Interfaces	Analog 2 mV/V; POWERCELL®: High speed
Applications	**RLC:** Low profile weighing; High precision weighing
	SLC610: Tank weighing
	0782: Vehicle weighing; Tank weighing
	POWERCELL® PDX®: High performance weighing
Accessories	Load receivers, J-Boxes

Models	MTB, 0745A, SLB215, SLB415
Max. Capacity (kg)	**MTB:** 5, 10, 20, 50, 100, 200, 300, 500
	0745A/SLB215/SLB415: 110, 220, 550, 1,100, 2,200, 4,400
Resolution	3,000e, 6,000e
OIML approval	C3, C6 OIML R60
NTEP approval	NTEP 3,000d, 5,000d, 10,000d
ATEX approval	Zone 1/2 and Zone 2/22
FM/cFM approval	Class I, II, III, Div. 1&2
Material	Stainless steel, nickel plated steel
Protection	IP67, IP68 laser welded
Interfaces	Analog 2 mV/V
Applications	**MTB:** Low capacity tank weighing, process control
	0745A: Floor scales, tank weighing, process control
	SLB215/SLB415: Packaging, dry filling, warehouses
Accessories	J-Boxes, Load cell accessories

S-Type Load Cells

S-Type load cells are typically used to convert supended hoppers or other hanging devices into a weighing system or to convert mechanical scales to electronic. The robust and economical stainless steel design is suitable for use in industrial environments.

Model	SLS410, SLS510
Max. Capacity (kg)	50, 100, 250, 500, 1,000, 2,500, 5,000, 7,500, 10,000
Resolution	3,000e
OIML approval	C3 OIML
NTEP approval	III 5,000d
ATEX approval	Zone 1/2 and 21/22
FM approval	Class I, II, III, Div 1&2
Material	Nickel plated steel, stainless steel
Protection	IP67
Interface	Analog 3 mV/V
Application	Suspended hoppers, tension loads
Accessories	Rod ends

Load Cell Accessories

These help to integrate the weighing technology perfectly into a customized system.

Accessory	Application
EK – Expansion Kit	Optimized for best accuracy and coping with thermal expansion
EVK/EVKT – Expansion and Vibration Kit	Optimized for accuracy and coping with thermal expansion and vibration/shock
FTK/FTKT – Foot Kit	Link between floor and load cell with deck bending
BPK – Base Plate Kit	Mount load cell on concrete or other rough and low strength surfaces
Rod End and Nut	Rod ends for S-type load cell providing flexible load introduction

Analog Junction Boxes:
For Weigh Modules and Load Cells

The METTLER TOLEDO analogue junction boxes are suitable for quick and simple connection of multiple load cells to weighing electronics.

Model	AJB540S, AJB541M, AJB540L, AJB641S, AJB841S, AJB641SX, AJB841SX
No of load cells	4
ATEX approval	Zone 1/2 and 21/22
Material	304 stainless steel, 316 stainless steel
Protection	IP65, IP69k
Application	Multi load cell system

Vehicle Scales

Designed for Your Business
Industry-focused Vehicle Scales

METTLER TOLEDO protects your business by supplying you with accurate truck and rail scales designed to survive in any work environment. METTLER TOLEDO invests in your future by building the most robust weighbridges and unmatched industry-leading weighbridge electronics designed for a long service life.

Aggregates
Solutions for both on-road and off-road trucks. Unattended stations provide 24-hour, operator-free service.
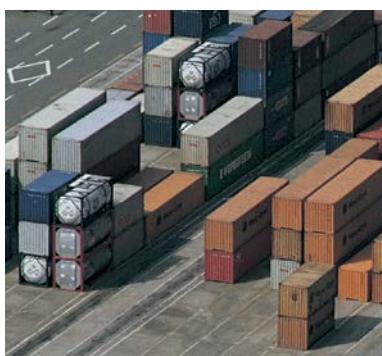

Waste, Recycling and Scrap
Economical solutions for high-volume sites. DataBridge™ software tracks variables such as carrier and material types for both origin and destination.

Chemical
Reclaim lost profit by weighing trucks filled by flow meters. METTLER TOLEDO scales perform accurately even when installed in a hazardous area.

Transport & Logistics
Static or dynamic truck and rail scales ensure that all goods are accurately accounted for and are safe for transit.

Mining
Complete solutions for weighing on-road trucks as well as all sizes of off-road trucks and rail cars.

Food & Agriculture
Accurate vehicle scales ensure fair trade and governmental compliance throughout the food chain.

Every Possibility for
Installation, Foundation and Value

Surface Mount Foundation
- Popular with many customers
- Lower cost compared to built-in foundations
- Easy to clean
- Good when the truck turning radius is large

Shallow Pit Foundation
- Lowest overhead clearance – great for filling
- Lower cost compared to deep pit
- Usually for warmer climates
- Debris cleaned from above
- Requires a drain

Deep Pit Foundation
- Lowest overhead clearance – great for filling
- Good for cold climates
- Scale access through optional access openings
- Requires a drain

Easy Installation
- Great in tight spaces
- Lowest cost solution compared to other scale types
- Fast load cell access

Static or Dynamic Weighing

Vehicle Weigh in Motion (WIM)
- Customer-specified solutions
- For law enforcement or statistics
- Violation and statistics reports
- Slow, medium and high speed
- Axle weight, axle spacing and wheel weight calculation

Rail Scales
- Static or Coupled in Motion (CIM)
- Capacities to over 400 t
- In-ground for best continued accuracy
- Strongest designs available
- Single, dual and triple platforms

www.mt.com/vehicle

Vehicle Weighing Solutions
Designed for Your Application

METTLER TOLEDO weighbridges have a proven history of accurate vehicle weighing in the most demanding industries and the toughest environments. No matter what type of vehicle weighing application you have, we offer a solution.

VTC200

The weighbridge is constructed of precast concrete for quick and easy installation. Its durable concrete deck provides a safe, non-slip driving surface. A proven weighbridge design for reliable weighing of highway vehicles.

Weighbridge Type	Multi-module
Driving Surface	Concrete
Construction	Precast concrete
Scale Length	6 to 40 m +
Axle Load	22 t double, 30 t triple
Foundation	Above ground, shallow or deep pit
Shipping	Standard

VTS200

The weighbridge features a steel deck reinforced with ortho-tropic ribs for strength and durability. Its steel driving surface is easy to clean and maintain. A proven weighbridge design for reliable weighing of highway vehicles.

Weighbridge Type	Multi-module
Driving Surface	Steel, 30 cm thick
Construction	Orthotropic ribs
Scale Length	4 to 48 m
Axle Load	28 t dual tandem axle
Foundation	Above ground, shallow or deep pit
Shipping	Ships economically in container

VTC205

The weighbridge is constructed of a rein-forced steel framework with concrete poured on site. Its durable concrete deck pro-vides a safe, non-slip driving surface. A proven weighbridge design for reliable weighing of highway vehicles.

Weighbridge Type	Multi-module
Driving Surface	Concrete
Construction	Locally poured concrete
Scale Length	4 to 48 m
Axle Load	28 t dual tandem axle
Foundation	Above ground, shallow or deep pit
Shipping	Ships economically in container

VTS202

The weighbridge features a robust steel deck reinforced with orthotropic ribs for exceptional strength and durability. Its steel driving surface is easy to clean and maintain. A proven weighbridge design for reliable weighing of highway vehicles.

Weighbridge Type	Multi-module
Driving Surface	Steel, 48 cm thick
Construction	Orthotropic ribs
Scale Length	4 to 48 m
Axle Load	28 t dual tandem axle
Foundation	Above ground, shallow or deep pit
Shipping	Ships economically in container

VTS302

The weighbridge features a robust steel deck reinforced with orthotropic ribs for exceptional strength and durability. Its steel driving surface is easy to clean and maintain. A proven heavy-capacity design for reliable weighing of off-road vehicles.

Weighbridge Type	Multi-module
Driving Surface	Steel, 48 cm thick
Construction	Orthotropic ribs
Scale Length	4 to 48 m
Axle Load	40 t dual tandem axle
Foundation	Above ground, shallow or deep pit
Shipping	Ships economically in container

VRS241 Rail Scale

The weighbridge provides accurate weighing of rail cars by converting a section of railroad track into a scale. It is available as a static scale or as a dynamic scale for weighing rail cars that are coupled together and moving over the weighbridge.

Weighbridge Type	Multi-module
Deck Type	Steel or concrete
Construction	Welded steel beams
Scale Length	3.8 to 22.8 m
Capacity	400 t +
Foundation	Shallow pit
Shipping	Standard

Containerized™ Scales

METTLER TOLEDO Containerized™ vehicle scales reduce transportation costs because they can be packed and shipped in a standard (ITU) shipping container.

Our comprehensive design, analysis, and testing program enables us to deliver scales with the proven ability to meet the demands of your weighing application. No other manufacturer designs and tests weighbridges this thoroughly.
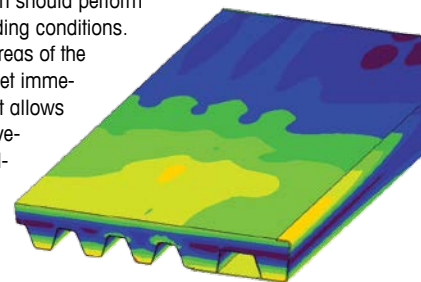
Design

We use a three-dimensional computer-aided design (CAD) system to ensure that our weighbridges meet the most rigorous design standards. Throughout more than 20 years of CAD modeling, we have refined our designs to offer you the best weighbridges available. Our engineers continue to use innovative ideas to build on the success of our proven designs.

Analysis

We use finite-element analysis (FEA) on each design to identify areas of high and low stress. This virtual testing shows how a weighbridge design should perform under various loading conditions. By analyzing all areas of the weighbridge, we get immediate feedback that allows us to make improvements before building a full-size prototype.

Testing

METTLER TOLEDO is the only manufacturer that goes beyond theoretical design and analysis to test actual weighbridge modules. Our unique Module Masher test stand applies 20 years of truck traffic in 6 to 8 weeks, simulating millions of weighing cycles at full design load. It gives us valuable performance data that other manufacturers must wait years to obtain.

▲ www.mt.com/vehicle

Vehicle Scale Load Cells
Unequalled Accuracy and Reliability

POWERCELL® PDX® load cells deliver the ultimate in vehicle weighing. No other load cells can match them for weighing vehicles accurately and reliably. They protect your profits by ensuring that your vehicle scale outperforms all other vehicle scale technologies.

Lightning Protection
Guard your vehicle scale against costly damage with POWERCELL® PDX® load cells and StrikeShield™ lightning protection. In independent laboratory testing, the POWERCELL® PDX® load cell has proven its ability to survive lightning strikes up to 80,000 amperes, more than twice the power of the average strike.

Predictive Diagnostics
A built-in predictive diagnostics system constantly monitors the load cell to verify that it is operating at peak performance. By alerting you to potential problems, the diagnostics system helps prevent serious weighing errors and scale failure.

Digital Compensation
A microprocessor inside each load cell continually adjusts the weight signal to compensate for environmental forces. It provides accurate weighing regardless of the effects of temperature, linearity, hysteresis, and creep.

Simplified Network
POWERCELL® PDX® load cells connect to one another in a simple network that eliminates the need for failure-prone junction boxes. Electronic components are enclosed in the hermetically sealed load cell to protect them from the environment.
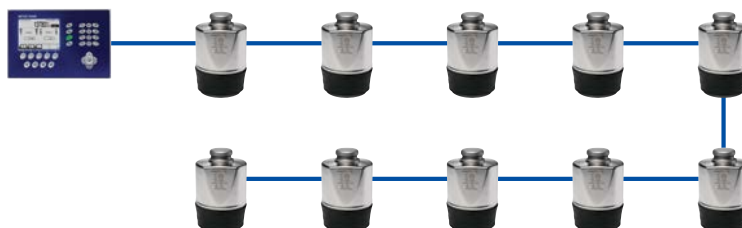
DataBridge™ Vehicle Scale Software

DataBridge™ software saves time and money by giving you complete control of your vehicle weighing operation. It processes transactions quickly and accurately to keep traffic moving over your vehicle scales. DataBridge™ SS software is an entry-level product for controlling one or two scales. DataBridge™ MS software is a powerful solution that controls more scales, provides greater security, and offers enhanced tracking.

DataBridge™ MS Capabilities

- Controls up to six scales plus traffic lights and gates
- Easy-to-use operator screen with touch-screen capability
- Microsoft SQL Server database for storing transaction data
- Presets speed up transactions by entering data automatically
- Pricing by material, customer, or contract
- Transactions by weight or volume

- Full-length, multi-axle, and split weighing
- Standard reports and tickets
- Easy-to-use data import/export
- Password-protected security for all tasks
- Ability to store compliance documents for tracking
- Optional unattended module
- Optional credit card module

Unattended Vehicle Weighing

DataBridge™ unattended software enables truck drivers to complete their own weighing transactions in seconds at an unattended driver terminal. It reduces operating costs by eliminating the need for a scale house with a scale operator on duty. It is ideal for scales in remote locations, scales that operate around the clock and facilities with multiple scales.

DataBridge™ Unattended Capabilities

- Supports up to six scales
- Supports two unattended driver terminals per scale
- Controls traffic lights, loops, gates and photo eyes
- Optional credit card module
- Terminals can be equipped with badge/card reader, printer, intercom and keyboard

www.mt.com/databridge
www.mt.com/powercell

Vehicle Scale Services
Targeted to Reduce Your Costs

METTLER TOLEDO complements the best vehicle scales with best-in-class vehicle scale installation, calibration, conversion, and maintenance services.

Weighbridge and System Installation

Our project managers coordinate all of the tasks, equipment and contractors for an on-time, perfectly specified weighbridge installation. Our specialists are also expert in installing, connecting and configuring the information technology essential to collecting, recording, and networking vehicle transaction data. We work with you in all project phases, saving time and money to guarantee your satisfaction.

Service Aware Scales

Our vehicle scales, terminals, and systems incorporate proprietary technologies to make them service friendly:

POWERCELL® PDX® load cells
- Instant digital error checking and diagnostics
- Self-monitoring and reporting

TraxEMT™ Embedded Maintenance Technician
- Maintenance planning and statistics
- Calibration checking & scheduling

Maintenance Predictive
- Monitors for out-of-spec. trends
- Remote monitoring & service alerts

Vehicle Scale Calibration and Service Agreements

Vehicle scales are often indispensable to shipping, receiving, inventory, and production accounting operations. But they are also subjected to forces of nature, heavy loads, and steady pounding traffic, which make maintaining accuracy and uptime challenging. Timely, factory-specified services provide the dependability you demand.

The METTLER TOLEDO fleets of heavy-duty test trucks are part of our services to keep you up and running. Our heavy capacity test weights are certified to traceable references so we can provide tailored calibration services that ensure accuracy and documentation to industry standards and regulations. If required, we also work with governing authorities to make sure your scale stays legal for commercial use.

Our vehicle scale service representatives are experts at testing, adjusting, calibrating, and maintaining your vehicle scales. Vehicle scale maintenance programs include periodic, factory specified checks and adjustments to provide a long service life and a safe, accurate, and productive scale. Allow METTLER TOLEDO to tailor a cost-effective vehicle scale service agreement, providing just the service you need, when you need it. We will make sure that nothing slows down your scale traffic.

METTLER TOLEDO scale installed at McMurdo Station, the only truck scale in Antarctica (Average temperature -17°C)

Reduce long-term service costs

METTLER TOLEDO is committed to ensuring your long-term profitability by reducing your service and calibration costs. The METTLER TOLEDO POWERCELL® system is in use almost everywhere in the world, protecting our customers from the typical causes of premature scale failure like lightning, rodent and water damage. Your trucks and trains move through your facilities without the risk of an unplanned breakdown and unnecessary extra costs. Moreover, our weighbridges are specified, and tested, for your application and the vehicles you want to weigh. When you consider maintenance and calibration services, for your existing and future scale needs, METTLER TOLEDO will provide the right agreement for value and continued compliance with your local approval agency.

www.mt.com/vehicle
www.mt.com/service

Transport & Logistics Solutions

Foto: Paylessimages (Fotolia)

Innovative Solutions
for Postal Applications

METTLER TOLEDO offers a broad range of scales, dimensioners and accessories for numerous applications to meet your needs within the postal environment. The equipment can be adapted to meet the demands of your system in work areas such as:

- **Point of Sales**
- **Back Office**
- **Shipping**
- **Distribution**
- **Integration**

Find out what METTLER TOLEDO can do for you.

Point-of-Sale Applications
The range of scales for POS applications at post office counters and retail outlets have become a reference among postal organizations. For letter and parcel weighing from 6–35 kg, METTLER TOLEDO offers precise weighing solutions without c compromising counter space.

Expertise beyond Point of Sale
For reference weighing of letters to weighing complete mailroom pallets, METTLER TOLEDO scales with weighing ranges from 30 kg to 1,500 kg, are ideal solutions for shipping docks, back offices and sorting rooms.

	Compact Scales	Terminals/ Platforms	Dynamic Scales	Dimensioners	Loadcells
POS	■	■		■	
Back Office	■	■	■		
Shipping	■	■		■	
Distribution			■	■	
Integration	■	■		■	■
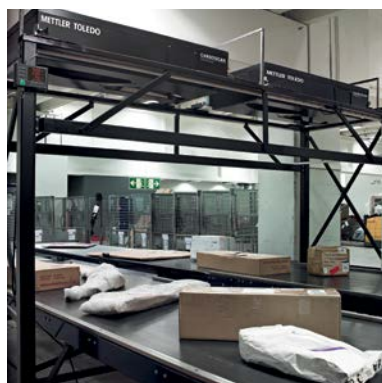
Dimensioning

Nowadays mail volume can be more important than actual weight. METTLER TOLEDO has a full range of scanning and dimensioning devices. Speed, accuracy and identification capabilities are all requirements fulfilled through METTLER TOLEDO know-how and reliability.

Weight Technology Integration

METTLER TOLEDO is a leader in integrated POS weighing systems. Our high-accuracy scales easily fulfill unique postal requirements and their multi-interval weighing ability manages high resolutions for letters and post cards as well as heavy parcels. The scales can be incorporated into postal self-service devices where

letters and/or parcels can be weighed, paid and sent without involving post office personnel. Scale overlays and graphical images can be customized with company logos.

▶ www.mt.com/postal-solutions

Dimensioning, Weighing and ID
Flexible Data Capture

At METTLER TOLEDO, we create complete weighing, measuring and identification solutions that bring financial and operational efficiency to transport and logistics.

From simple scales and dimensioners, to fully integrated high-speed solutions that use sophisticated data management software, we offer modular solutions for any handling environment.

Highest Read Rate
The more items a system can automatically process, the more revenue it can recover. Our dimensioning technology is proven to accurately measure the widest range of shapes, sizes and surfaces, providing our customers with best possible revenue recovery.

Maximum Uptime

When measurements are directly linked to profit, downtime is expensive. Rugged design, quick replacement and easy upgrades are all features that make sure that your system is up, running, and making money, round the clock.

Easy Communication

Communication with your IT system is easily set up. Connect your dimensioning, weighing and identification equipment to existing IT infrastructure via internet, serial ports, FTP or TCP. Store, display and recall information when you need it. Configuration, maintenance and updates can be done remotely to ensure maximum system performance and uptime.

▶ **www.mt.com/logistics-competency**

In-Motion Dimensioning
Weighing and ID

Weighing and identification go hand-in-hand with dimensiong. Transport companies typically require a complete data profile of each object, including dimensions, weight and identification.

METTLLER TOLEDO delivers high-speed, in-motion systems that collect dimensions, weight and ID of packages as they are transported on a conveyor. All data is captured in one, seamless process, and offer high read-rates offer optimum operational efficiency.

Modular Systems
The beauty of METTLER TOLEDO's transport and logistics solutions is their modularity. Our systems can be customised to suit individual data capture and application needs. Customers can select their own components for their exact dimension, weight, ID and conveyor

control requirements, all of which are controlled by proprietary OCTO DataCapture™ software.

Advanced Sorting & Tracking
The sorting function can be as advanced or simple as you like. Use it to simply reject parcels that don't fit a correct profile or to tell the sorter
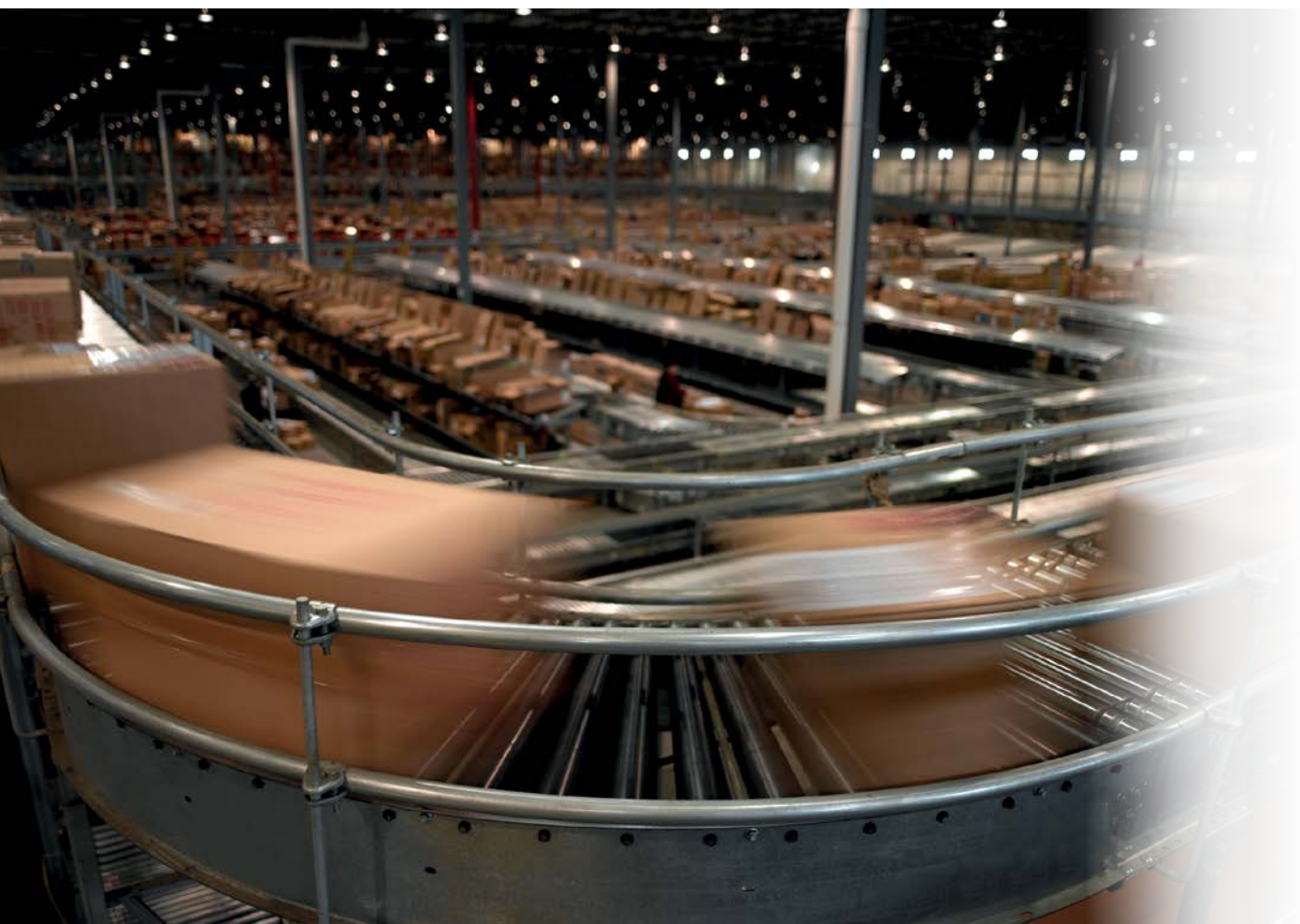
what to do with each item. Build up commands by destination or product code to ensure that each package gets to the right place on time.

Operation Modes

Measure efficiently without disrupting operational flow by setting up different operation modes. Select only the data you need for certain customer profiles, different times of day or in-bound and out-bound measuring.

OCTO DataCapture™

Software is what transforms simple dimensioning, weighing and identification components into a data capture solution.

The basic function of OCTO™ is to take information from different components – dimensioner, scale and barcode reader – merge it, and send the data to the host. Once the data profile has been created, OCTO™ can then communicate with other devices such as the sorter system to ensure smooth operation.

OCTO™ is fully configurable to ensure that the system meets the specific needs of each customer.

▶ **www.mt.com/dws-guide**

Choose your own modules

To enhance efficiency further, there are a number of different software features available that can further add value to your investment in automatic dimensioning, weighing and scanning. Choose the modules you need for your particular operation.

- **Image capture**
  Real-time picture of the scanned object can help deal with customer disputes, refute damage claims and act as proof of correct invoicing

- **Health monitoring**
  Monitor the health of your system to ensure continued high performance

- **Remote diagnostics**
  Identify problems off-site for quick repair and maximum system up-time

- **Separation**
  Split touching packages and correctly measure and sort all items

- **Alibi memory**
  Secure data storage in a legal for trade database that cannot be tampered with

- **Parcel positioning**
  Exact data on parcel positio, size and angle to maximize sorting efficiency, reduce jams and improve tracking

- **Sorting**
  Sends instructions for correct sorting to your conveyor system

- **Verification**
  Packages will stop for manual intervention or be diverted to a separate lane if mandatory information is not registered.

From Parcels to Pallets
Static Dimensioning, Weighing and ID

Our static systems are designed to dimension, weigh and identify stationary objects. Place the object under the dimensioner manually or with a forklift truck and scan the bar code. In seconds the data is captured and the object can be removed. Regardless of the size of your operation, we have an easy-to-use system to help you automate your data collection. Operators can speed up productivity from the day the system is installed.

Automate data collection and eliminate:
- Data inaccuracy
- Human error
- Re-entering of data
- Paperwork

Model	CSN810 TableTop™
Dimensioner accuracy*	± 5 mm
Maximum size (L x W x H)	Flat table: 1,150 × 750 × 700 mm Roller table: 1,000 × 600 × 840 mm
Minimum size (L x W x H)	Flat table: 50 × 50 × 50 mm Roller table: 100 × 50 × 50 mm
Throughput	Approx. 400 per hour (dependent on operation)
Shape	Rectangulars
Weight	Minimum: 0.4 kg; Maximum: 150 kg (Flat), 60 kg (Roller)
Scale resolution	± 20 g
Barcode reading	Wireless handheld; Laser based (1D codes)

Pallet Handling
Any Shape, Size and Surface

Our pallet measuring systems can easily be integrated to any location. Pallet traffic on the floor can be reduced with ceiling-, floor- and wall-mounting options. The strong optical design allows the systems to accurately measure all surfaces, such as glossy black plastic, a well-known and difficult to measure wrapping on pallets.

Model	CSN840 Pallet™
Dimensioner accuracy*	± 20 mm*
Maximum size (L × W × H)	1,830 × 1,830 × 2,600 mm (standard) 2,500 × 2,500 × 2,600 mm (XL-version)
Minimum size (L × W × H)	200 × 200 × 200 mm
Throughput	Approx. 200 per hour (dependent on operation)
Shape	Irregulars
Weight	Minimum: 10 kg − 40 kg; Maximum: 1,500 − 6,000 kg
Scale resolution	0,5 − 2 kg
Barcode reading	Wireless handheld; Laser based (1D codes)

Mobile Solutions
Weigh and Measure on the Move

METTLER TOLEDO offers solutions for weighing on the move. Our pallett scales are modular in design and can be configured to meet different handling and connectivity requirements. The scale carriage is constructed of solid steel and designed to withstand years of heavy use.

Read more about pallet scales on page 88–89.

▶ **www.mt.com/ind-pallet-truck-scales**

CSN110 ScanTape™

Mobile dimensioning makes it possible to quickly check dimensions of parcels and pallets at any stage of the logistics process and can be used by drivers to collect data early, at point of pick-up.

Measurement	Tape	19mm × 3m (10ft)
	Units	US - inches (rounded to whole, half or tenth) Metric - cm (rounded to whole or half), mm
Communications	Bluetooth®	Class 2 SPP and HID profiles
	USB	Types AB for data transfer and recharge
Power	Li-ion	970mAh with 2-hour recharge cycle
	Duty Cycle	Minimum 2 days on heavy duty cycle
Display	OLED	128 × 128 @ 24 bit full color
Scanner	1D	Optical 650nm visible laser diode
	Program	Common symbologies and features
Functions	Five Buttons	Brake/Measure, Scan/Record, Send/Next, Save/Append, Back/Power
	Shortcuts	Insert Pallet, Same as Last, Append
	Ergonomics	Tactile, 3 x LEDs, buzzer
Physical	Dimensions	123mm x 72mm x 31mm
	Weight	Approximately 230g
Software	SDK	.NET and .NET Compact Framework, Desktop, PDA and PDA wedge sample applications
	ScanTape Manager	Configuration and management utility
	PDA Pairing Utility	Windows Mobile and WinCE utility to simplify and streamline connection and data transfer to qualified Motorola PDAs
Regulatory	Environment	C-Tick, CE and FCC Certifications
	Metrology	NMI 13-1-23, MID pending
Other	Application	Programmable/Configurable
	Temperature	-20°C to 50°C, 14°F to 120°F
	Humidity	Operating: non-condensed 10% to 80% Storage: 5% to 80%
	Accessories	Tape cassette, Silicone Sleeve, Battery, Rear Cover
	Warranty	12 months (excluding tape cassette)

www.mt.com/CSN110

Dimensioners
for Profitability, Efficiency and Flexibility

METTLER TOLEDO brings a new portfolio of dimensioners to the market. Small and compact, they are easy to integrate into any application. The high laser sensitivity provides accurate measurements on all surfaces and in all conditions, increasing read rate and those extra profitable percentages.

Our new technology has a host of dimensioning features, designed with efficiency in mind.

Adding value to the future
METTLER TOLEDO is continuously developing new systems, software and features to enhance our strong technology base.
Equip yourself for the future!

Model	CSN950
Dimensioner accuracy*	± 2 mm height, ± 5 mm length and width
Maximum size (LxWxH)	2500 x 900 x 900 mm
Minimum size (LxWxH)	50 x 50 x 20 mm
Belt speed	0–3 m/s
Throughput	Up to 10,000 per hour (dependent on operation and system configuration)
Shape	Rectangulars with 1 CSN950; Irregulars with 2 CSN950
Spacing	Back-to-front touching of rectangular objects, singulated and separated for irregulars
Flow	Back-to-front touching or singulated and separated
Barcode reading	Top, side and front reading; Laser based and cameras (1D and 2D codes)

Services
for Transport and Logistics

For maximum benefit from your transport and logistics equipment, it must be properly installed, calibrated and maintained. Our qualified specialists provide timely local and personal service, backed by global support and expertise.

System installation and integration

We focus our experienced project managers and service representatives on coordinating the on-time start-up of your dimensioning, weighing and scanning system. Our Service specialists are also experts in integrating information technology vital to capturing, recording and networking package identification, weight and dimensional data.

System calibration and service agreements

Service solutions for calibration, repair, and proactive maintenance permit you to continuously leverage your equipment to add revenue and boost your bottom line. We will also help to make sure that your measurements satisfy legal requirements for use in commerce.

METTLER TOLEDO will provide a Service Agreement that keeps packages and pallets moving, day after day.

Services for your dimensioning system

- Timely installation and start-up
- System and data integration
- Performance qualification and certification
- OEM service parts and on-site repair
- Remote diagnostics and support
- Preventative maintenance
- Tailored, cost-effective service programs

www.mt.com/logistics-competency

Product
Inspection

Product Quality and Integrity
Maintained Inside and Out

Product inspection solutions from METTLER TOLEDO Safeline, Garvens and CI-Vision safeguard the quality and integrity of your products, inside and out. They address the challenges experienced by manufacturers in a diverse range of industries and markets, across the globe.

Product Safety and Integrity

All product inspection equipment meets or exceeds HACCP, NEMA 4X and various hygiene standards. In addition, you can profit from user training seminars, performance validation and process audit programs to ensure guidelines are adhered to and reliably maintained.

Equipment Durability

The metal detection, checkweighing, X-ray and vision inspection systems offer an unbeatable combination of sensitivity, ease-of-use and reliability. They deliver consistently high performance product inspection in the toughest production and processing environments.

Product Quality

Your brand's reputation depends on safe, accurately-filled, and consistently high-quality products. Our product inspection solutions can help you to address issues such as inefficient filling, false rejects and production downtime.

Tailored Solutions

We partner with you to develop an understanding of your specific requirements, and will provide either a standalone or fully-integrated product inspection solution that meets those needs. All of our systems help to uphold quality standards and preserve product and brand integrity.

SAFELINE
Metal Detection

SAFELINE
X-ray Inspection

GARVENS
Checkweighing

CI-VISION
Vision Inspection

PCE
Pharma Vision Inspection

ProdX Data Management Software
Centralized Product Inspection Monitoring

ProdX data-management software provides seamless integration of product inspection devices making processes more streamlined, more accessible and more efficient. ProdX allows you to control your entire product-inspection management process from a single point or from multiple remote locations, eliminating the need for time-consuming production line patrols.

The innovative ProdX software automatically collects the critical inspection process data you need in one convenient location significantly reducing the need to interact directly with the Critical Control Points (CCP) on your factory floor. This saves time and effort and lets quality operatives focus on other issues.

Improved product quality
ProdX turns your product inspection equipment into a networked monitoring system, increasing production transparency and maximizing device uptime.

Whether it's collecting data to meet local Weights and Measures legislation, supporting compliance with standards under the Global Food Safety Initiative (GFSI) or satisfying the demands of other quality protocols and in-house quality standards, ProdX can play a part.

Enhanced productivity
Streamlining, speeding up or eliminating set-up time between production batches reduces downtime, and that is just one of the benefits you will see with ProdX. Add the ability to closely monitor operation of your CCPs and being advised of adverse trends before they threaten your line efficiency, and you can start to see how beneficial the software can be.
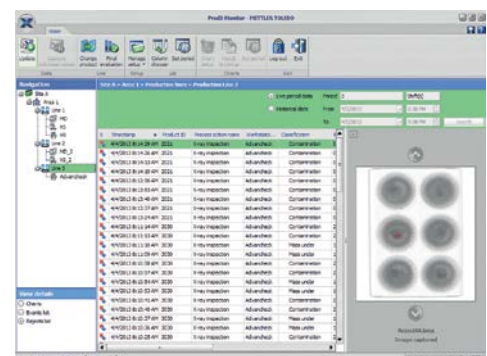
Increase Production Line Efficiency
And Protect Your Brand Reputation

In-line checkweighing helps prevent underweight product from being shipped while minimizing the risk of costly overfill. Garvens' comprehensive range of dynamic weighing solutions helps to deliver productivity and profitability for manufacturers in industries including food and beverage, chemical, pharmaceutical and others.

Solid and heavy-duty construction provides a rugged, stable foundation for precise and consistent checkweighing. Programmed speeds can be stored with product set-ups for fast and easy product changeover. Control options such as statistics, filler feedback control and comprehensive connectivity packages help our checkweighers fit seamlessly into any production line.

Economic & Flexible
Garvens XE Checkweighers

State-of-the-art, dynamic weighing technology at an economical cost. The standard design of the XE2 and XE3 models comprises a device for height adjustment as well as reversible transport direction.

All XE models have variable speed control and allow for upgrading. A wide range of options allows them to closely meet a range of user requirements. The modular concept makes the XE models very service-friendly. They require little maintenance.

Garvens XE2 Checkweigher
Weighing range: up to 600 g
Throughput: up to 200 pcs/min.

Garvens XE3 Checkweigher
Weighing range: up to 6,000 g
Throughput: up to 200 pcs/min.

Garvens XE40 Checkweigher
Weighing range: up to 40 kg
Throughput: up to 100 pcs/min.

Garvens XE100 Checkweigher
Weighing range: up to 120 kg
Throughput: up to 80 pcs/min.

Precision Weighing and Foreign-Body Detection
Garvens XS3 AdvanCheK

This unit combines true weight measurement with the world's best sensitivity X-ray inspection. The X-ray CombiWeigher "XS3 AdvanCheK" not only offers highly accurate weighing results but also simultaneously checks your products for foreign bodies, protecting not only consumers but also the good reputation of your brand. The x-ray system can detect high density contaminants such as metal, glass and stone. Minimum training is required to set up menus, thanks to an "auto set-up" software wizard that ensures minimum downtime. The X-ray CombiWeigher from METTLER TOLEDO is a compact and cost effective solution, ideal for use in the food industry.

In-line Inspection of Mini Products
Garvens XS1 Checkweigher

The XS1 is a particularly compact design of the proven "X Series" range of dynamic checkweighers. It is specifically designed for handling small size/footprint products in high-throughput production lines. The small, lightweight conveyors ensure a high weighing accuracy is maintained even when operating at high belt speeds. Its compact design ensures that the Garvens XS1 can be easily integrated into most existing production lines.

New Hygienic Standards
Garvens XS3 H Checkweigher

This HACCP checkweigher ensures product and water build-up contamination is minimized by avoiding level surfaces on the conveyor and weighcell supports, as well as the exclusive use of round tubes on the horizontal section of the frame. The minimal contact conveyor support clamps and open frame construction facilitate cleaning. Seam welding improves hygiene and reduces the risk of bacteria build-up. A reduced number of support legs, self-draining framework, hygienically designed cable runs and an additional customer cable duct make this checkweigher optimal for use in the food industry.

Trouble-Free at High Speed
Garvens Chain Checkweigher

For optimum production flow and maximum hygiene – your first choice for difficult applications. The chain checkweigher ensures that even tall products with a small footprint are transported quickly and gently over the checkweigher. Robust design, state-of-the-art weighing technology, water ingress protection and stainless steel parts ensure trouble-free operation under harsh production conditions. The easy access design simplifies the cleaning process, making the chain checkweigher ideally suited for use in wet environments. It can be quickly adapted in a few simple steps for different products. Various options for product transport ensure optimum product infeed.

www.mt.com/garvens

Rugged Design
Garvens XE40 Checkweigher

The XE40 checkweigher is an extremely versatile and dependable checkweighing solution for loads up to 40 kg. It has a memory capacity for up to 100 products and a 7" color touchscreen interface. This makes the XE40 checkweigher perfect for use in logistics and end-of-line packaging applications, where strict demands are placed on accuracy and ease of operation.

The Policeman
Garvens XC Checkweigher

Proven weighing technology in compact design at an attractive price. Developed for simple weighing tasks. Checkweighing with a weighing range of up to 6,000 g.

Proven Quality
Garvens XS Checkweighers

Proven Garvens quality, new approaches to operation and flexible, modular design are the basic assets of these state-of-the-art weighing systems with variable speed control. The standard design of the XS2 and XS3 models includes a height adjustment device and reversible direction of transport. The modular concept of the XS Series allows for ease of servicing and ensures that they can easily be extended by further options.

Garvens XS2 Checkweigher
Weighing range: up to 600 g
Throughput: up to 400 pcs/min.

Garvens XS2 Pharma Checkweigher
As above, incorporating various options typically used in pharmaceutical production plants.

Garvens XS3 Checkweigher
Weighing range: up to 6,000 g
Throughput: up to 400 pcs/min.

Garvens XS40 Checkweigher
Weighing range: up to 40 kg
Throughput: up to 100 pcs/min.

Garvens XS100 Checkweigher
Weighing range: up to 120 kg
Throughput: up to 80 pcs/min.

XS3

XS2 Pharma

XS100

HACCP and Optional IP69k Ingress Protection
Garvens XS3 CC H CombiChecker

This combination checkweigher checks whether products are on-weight and free of metal contamination in one process, reliably rejecting those which do not conform. Specifically designed for the food industry, with optional IP69k ingress protection, the HACCP concept has smooth surfaces for optimum hygiene. The hinged 15" touchscreen color display can be tilted and swivelled for optimum visibility and ease of operation.

All in One
Garvens XS3 CC CombiChecker

The Garvens XS3 CC CombiChecker combines a checkweigher and a metal detector in one unit. As the products pass through the CombiChecker, product weights are measured and any metal contamination is detected. Metal-contaminated products are separately rejected by two pneumatic pushers or other rejecting devices. The checkweigher terminal displays weights, counter levels of the weight zones and metal-contaminated products, and provides statistical production information. Its hygienic design facilitates cleaning and meets the guidelines for food processing industries.

Accuracy at its Best
For Lightweight, Unusually Shaped Packages

The StarWeigh XS rotary stepper checkweigher has proven to be the absolute best solution for checkweighing of a wide range of package sizes. High value products typically require 100% inspection and the StarWeigh XS is the perfect solution for highly accurate checkweighing of round, oval, and even rectangular shaped packages. StarWeigh XS delivers milligram accuracy at a throughput up to 400 weighings/minute. Simple to install and requiring no line cuts, the StarWeigh XS can integrate with packaging lines by simply straddling the existing conveyor.

www.mt.com/garvens

Flexible Serialization for Pharmaceuticals
For Counterfeit Prevention

The XS2 MV Marking and Verification checkweigher system is a complete serialization solution giving track and trace capabilities to existing or new production lines. All components, which include ink jet printing systems, high resolution visual verification systems, mechanical transfer units and rejecting devices, have been finely tuned to synchronize, enabling you to meet global serialization, E-Pedigree and track and trace legal requirements and specifications.

The XS2 MV incorporates a highly accurate checkweigher and is available with an integrated laser marker or ink jet printer. Dynamic checkweighing, marking, verification, precision product handling and reliable sorting – the perfect combination of all processes in one compact system. The product codes printed onto the collapsible box by the printing system are verified for accuracy and legibility and serve as a key for legally required quality certificates.

XS2 MV with ink jet printing system

XS2 MV with laser marking system

4-in-1 Fully Enclosed Pharma Solution
XS2 MV TE

- Checkweighing, marking, verification and tamper-evident sealing.
- Accurate weighing, ink jet printing and vision verification to ensure global traceability and assist fraud prevention.
- Product codes printed are verified for accuracy and legibility and serve as a key for legally required quality certificates.
- Tamper evidence by labelling the products with safety seals.
- Weighing range up to 300g
- Process reliability and high production volume.

Conforms to Pharma Requirements
The checkweigher combination XS2 MV can be immediately integrated into all applications where the production process needs to conform to pharmaceutical user requirements specifications (URS) such as 21 CFR part 11, full traceability, audit trail and validation supporting documentation.

This offers considerable time and money savings in all critical steps from planning through to commissioning.

Precision Product Transfer
The mechanical transfer unit is equipped with easily adjustable hand wheels for high-accuracy position control, enabling system adjustment for variable package dimensions in seconds. This dramatically reduces downtime for product changeovers.

Exact handling allows for high conveyor speeds, increasing productivity and sustaining existing line speeds for current and future applications.

Expertise in Pharma Checkweighing
A wide range of options especially designed for the pharmaceutical industry is available. Factory acceptance test, validation supporting documentation and our world-wide service network all ensure that producer requirements will be perfectly met.

Maximum Reliability
Finely tuned system components including transfer belts, ink jet or laser printing systems and print verification devices ensure an optimum production flow, perfect printing quality and increased line efficiency.

Adaptability – Performance – Reliability
C3000 Checkweigher System

System architecture with the utmost flexibility: This new generation of checkweighers offers a whole host of ways to combine mechanical and electronic options. The modular architecture of the C3000 system means it can be perfectly adapted to suit the user's production requirements. In just a few logical steps, the configuration of the checkweigher or combination solution is complete, to suit the respective application.

From diverse base frame designs and a huge range of product transport options, right through to a product-oriented ejection process that uses a variety of sorting equipment for quick yet careful operation – you really can have it all.

To improve your overall equipment efficiency and total cost of ownership, the C3000 System has been designed for top performance at highest speed and for a wider weighing range in order to reduce rejects, minimize waste and help you improve your quality-management system. No matter the working environment or which packaging type, the C3000 System offers superb reliability and high uptime adapted to your specific needs. C3000 System checkweighers are top performing, extremely robust, and a very smart investment. Imagine what you could do with this checkweigher.

The Economical Solution for Products up to 10,000 Grams
C3530

- Outstanding weighing accuracy and speed
- Integrates into production lines with ease
- Variety of data communication interfaces and other options
- Can be configured to perform a wide variety of different tasks

The Ideal Solution for Sophisticated Tasks
C3570

- For products up to 10,000g
- Outstanding weighing accuracy and speed
- Integrates into production lines with ease
- Vast range of programs, data communication interfaces and other options
- Can be configured for best-in-class performance to match even the most challenging applications

Economical, Compact 2-in-1 Solution
CM3530

The CM3530 represents a cost-effective combination of an innovative checkweigher and a metal detector, which can be configured to perform a wide variety of different tasks. For products up to 10,000 g.

- Outstanding weighing accuracy and speed
- Integrates into production lines with ease
- Variety of data communication interfaces and other options

2-in-1 System for Even the Strictest Demands
CM3570

Thanks to its vast range of options, the CM3570 can be customized to perform a wide variety of tasks. The future-oriented system architecture of this CombiChecker allows very flexible configuration. For products up to 10,000 g. An innovative system with a dual function that meets quality assurance criteria in accordance with FDA part 11 or IFS.

- Outstanding weighing accuracy and speed
- Integrates into production lines with ease
- Variety of data communication interfaces and other options

Brand Protection
at the Touch of a Button

METTLER TOLEDO Safeline X-ray Inspection offers a range of X-ray systems for the inspection of packaged and unpacked products in the food and pharmaceutical industries. Our X-ray technology offers exceptional contamination detection, locating foreign body contaminants such as glass, metal, stone, calcified bone and high-density plastics, even in products packaged in foil or metallized film. In addition, X-ray systems can simultaneously perform a wide-range of in-line quality checks including:

- **Measuring Mass**
- **Component Counting**
- **Identifying Missing or Broken Products**
- **Monitoring Fill Levels**
- **Inspecting Seal Integrity**
- **Checking for Damaged Packaging**

X36

X33 Short

X33 Long

Next Generation X-ray Inspection Systems

Latest X-ray Technology
Combining new technology, an ergonomic design, improved user experience and sustainability credentials, Safeline X-ray's revolutionary new x-ray systems are truly market-facing and encapsulate the most advanced developments in product inspection capability.

Outstanding Detection Sensitivity
Designed in collaboration with customers, the next generation range is built upon manufacturers' needs and incorporates a host of features and benefits. For example, new detector technology, which is five times more sensitive than a standard detector, enables the next generation series of machines to achieve very high levels of contamination detection.

Advanced X-ray Systems
A choice of innovative detector diodes (0.8 mm or 0.4 mm), a 20-Watt X-ray generator option and detector width options enable systems to be customzed to suit food and pharmaceutical manufacturers' individual packaged application requirements, providing a future-proof investment, even if line changes are required after the initial installation.

SAFELINE
Metal Detection & X-ray Inspection

X36

X-ray Inspection of Packaged Products

X-ray inspection solutions offer complete product integrity for packaged products on single or multi-line applications, at high production speeds. To ensure product quality and safety, our x-ray systems deliver fast and reliable detection of contaminants and are not affected by changes in product temperature or moisture, thus ensuring minimum false rejects. X-ray inspection systems can simultaneously scan for missing or damaged items to confirm product quality, ensure product freshness by checking the seal integrity and measure gross or zoned mass for portion control to protect profitability.

X-ray Inspection of Glass Jars

Safeline X-ray's glass inspection machines can detect glass, metals, mineral stone, high density plastic and calcified bone, irrespective of their, shape, size or location within glass jars and bottles. Glass in glass x-ray detection systems automatically detect and reject contaminated glass containers from your production line, at very high line speeds. Safeline X-ray's single and multi-beam x-ray inspection solutions can be used for a wide range of glass containers, ensuring complete product safety.

InspireX R50G

InspireX R70

X-ray Inspection of Pumped Products

X-ray systems can be used for the inline inspection of pumped products, typically slurries, semi-solids and fluids, before the final packaging. X-ray systems for pumped products are used to inspect at the early stages of production, to minimize waste and save costs. Our Pipeline x-ray systems offer superior product safety through contamination detection in pumped food applications such as condiments, meat, jams and ice cream.

X33 Bulk

X-ray Inspection of Metal Cans

Safeline X-ray's range of X-ray inspection systems for cans is capable of a wide range of can in different shapes and sizes. Operating at high line speeds, metal cans are able to run touching rim-to-rim, allowing contamination detection at a rate of 1,500 cans per minute. Detecting contaminants in the base or side walls of a can, is challenging. However, our split dual-beam system overcomes this challenge with every can being imaged twice. Each image represents a different viewing angle, increasing coverage inside the container and the enhancing probability of detection.

InspireX R50SB

X-ray Inspection of Bulk Products

Safeline X-ray's bulk x-ray systems are specifically designed for the detecting of unwanted contaminants, regardless of their shape, size or location within bulk-flow (loose) products. Inspection before products are packaged, or added as ingredients to finished products, saves costs and reduces waste before further product value is added. Larger contaminants are removed before they are broken down into smaller pieces, which can potentially damage equipment. Product safety is also enhanced.

www.mt.com/safeline-xray

More Metal Detected
More Efficiently, with Greater Uptime

METTLER TOLEDO Safeline is the global market leader in the field of industrial metal detection for the food and pharmaceutical processing and packaging industries. Advanced inspection solutions ensure all metal contaminants are detected and effectively removed from the production process.

Profile Technology

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

Available in a choice of finishes and ingress sealing up to IP69k, Profile detectors can be specified to suit the actual working environment.

A large, full-color touchscreen interface with a Windows® style, icon-driven menu provides easy and intuitive operator access.

The Profile platform provides numerous operational benefits including:

- High security password-protected access
- Built-in auto setup routines
- Continuous condition monitoring
- On-screen histograms for the analysis of processes
- User access and detection event log

R and RB Series Detectors

Designed for easy integration into production lines, the R and RB Series metal detectors are usually combined with conveyor systems to transport product through the aperture of the search head.

R Series metal detection systems are able to inspect a wide range of packed, loose or web-continued products; larger packed or bulk loose products are effectively inspected by RB Series detectors.

These systems offer unrivalled sensitivity for the detection of the smallest metal contaminants, including ferrous and non-ferrous metals, non-magnetic stainless steels and irregular-shaped pieces. The RB Series is even able to inspect for contaminants in larger products where the product or bulk effect can mask metal contamination signals.

Compact Detectors

The inspection of small, packed products is cost-effectively handled by Compact detectors utilizing Safeline's advanced Profile technology.

Ideally suited for installation on production lines where space is restricted, these highly sensitive detectors are usually integrated with conveyor systems to detect tiny, irregular-shaped metal contaminants including the most difficult-to-detect non-magnetic stainless steels.
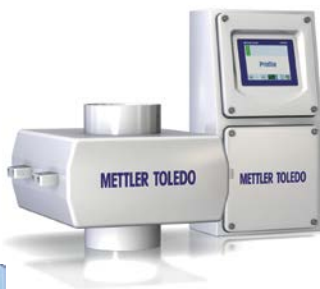
SAFELINE
Metal Detection & X-ray Inspection

Pipeline Metal Detection Systems

The rugged and compact L Series pipeline systems are suitable for the inspection of all manner of liquids, pastes nd slurries, e.g. sauces, soups, preserves, liquid chocolate, meat pastes, etc.

Constructed in stainless steel, with a hygienic design suited for heavy wash-down conditions and hostile environments, the L Series also comes with optional water-heated pipelines for high viscosity/molten products.

An array of automatic reject value options is available to remove contaminants from the product flow without stopping production.

Heavy-Duty Gravity Fall Systems

Built for installation in tough environments, Sealtite, Open and Y-Valve diverter gravity fall systems inspect fine, dusty powders, granules and other dry, bulk products in-flight for metal contamination.

Sealtite diverter technology is well-suited to dusty or fine particle products, while open diverters are more suitable for products with larger particles reducing the risk of blockages. Y-Valve diverters offer the ultimate in easy-clean technology for maximum uptime and plant efficiency. All systems are designed for minimized height allowing them to be installed in applications where space is restricted.

Optional ATEX-compliant designs are available for use in potentially explosive environments, to comply with ATEX Ex 11 Cat 2D T79 C.

Vertical Packaging "Throat" Detectors

T and ST Series metal detectors are designed for use in vertical packaging applications where product is inspected in-flight between multi-head weighers and vertical form-fill-seal bag-makers or packing machines.

One of the challenges for metal detectors in such applications can be the limited space available between the weigher and bag-maker. Safeline's unique Zero Metal Free Zone (ZMFZ) and Internal Cancellation Field (ICF) technologies eliminate interference from nearby metal structures, allowing installation in extremely small spaces without compromising sensitivity or performance.

Pharmaceutical Metal Detectors

Effective inspection of tablets, capsules, fine powders and granules is achieved by the Tablex-PRO and Pharma GF-PRO metal detection systems. They help pharmaceutical manufacturers comply with the most stringent industry regulations.

Available with a choice of high-speed reject mechanisms to remove contaminated product, these integrated pharmaceutical detectors offer extremely high detection sensitivity. The systems identify metal-contaminated product resulting from broken screens, sieves, worn punches, dies or raw materials.

An extremely small footprint minimizes space requirements and the stainless steel mirror finish is designed to exceed strict pharmaceutical industry standards. All devices are designed and constructed to meet the demands of FDA 21 CFR part 210 and 211, with operating security featuring dual-level login and electronic signature capture to comply with FDA 21 CFR part 11.

www.mt.com/safeline-profile
www.mt.com/metaldetection

Comprehensive Quality Control
Using Vision Inspection

METTLER TOLEDO CI-Vision provides the best available vision inspection technology to manufacturers seeking an effective and efficient quality control solution for label contents, container formation and container integrity. CI-Vision systems are turnkey solutions; each system features a simple touchscreen interface for all facets of operation and uses cutting-edge inspection tools and techniques to ensure every product on the line meets manufacturer standards.

Intuitive Software Interface

CI-Vision's CIVCore® software is standard across all CI-Vision inspection systems, presenting users with a touch screen interface designed for ease of use that is packed with the best inspection tools available. Inspections for every product on the line can be saved into profiles, which CI-Vision can then pre-load on the system before it ships to customers. When a new product is added to the production line, operators are presented with in-depth training wizards that help create new product profiles. CIVCore offers multi-level user access, allowing managers to keep tight controls over high-level functions without sacrificing usability for day-to-day operators.

PC Controlled GigE Cameras

Utilizing high-speed data transfer technology allows our cameras to quickly transmit large images to the inspection software, reducing the time it takes to analyze images for product defects and allowing CI-Vision inspection systems to keep pace with high speed production lines. Field maintenance is made easier by the use of standard parts and technology which further reduces downtime.

Product Tracking

Many vision systems do not use product tracking, relying instead on timing-based systems to fire cameras and trigger rejection mechanisms, but METTLER TOLEDO CI-Vision's systems use high-resolution step encoders to track products as they move through the system with incredible accuracy, resulting in more accurate inspections and ensuring that only defective products are removed from the production line. By tracking the products as they move through the inspection process, the system is able to sort rejected products into different bins depending on the defect detected.

QC

V6300

The V6300 is a flexible vision solution designed for label inspection and capable of inspecting most rigid packaging types through one slim terminal. The Rapid-Fit™ frame assembles quickly around existing production lines, allowing manufacturers to get their inspection system up and running as quickly as possible. Additional cameras and lights, and even remote stations, can be added to the system easily, giving the V6300 an unparalleled expandability which allows it to grow as manufacturers add new inspection requirements.

QC

CLS

This is a label inspection system built specifically for trays and flat packages and constructed to meet the strict hygienic requirements of the food industry. The CLS uses line-scan cameras to capture inspection images of both top and bottom labels to eliminate mislabeling errors and perform seal inspections. Sloped surfaces and stainless steel construction allow for easy washdown.

QC

FBI

A simple solution for filled bottle inspection applications, including fill level, cap height and tamper band presence and integrity, the FBI is designed for the needs of beverage manufacturers. With a slim profile and an innovative over-the-line design, the FBI installs easily and operates at speeds up to 900 bottles per minute. Manufacturers wishing to include a label inspection solution have the option of adding a remote station to the FBI which runs on the same touchscreen interface as the primary station.

QC

Mosaic

Utilizing a more efficient, easier-to-use image processing technology than conventional 360° solutions, the Mosaic allows for the inspection of round, un-oriented product labels. This more efficient method means the Mosaic can operate effectively at higher production speeds than other un-oriented vision inspection solutions. A variety of size options allows the Mosaic to fit into nearly any production line layout.

QC

RPC

The blow molding industry has been an area of expertise for CI-Vision for years, and the RPC is the culmination of that expertise. Fully configurable, the RPC is constructed to meet the specific needs of rigid plastic container manufacturers, with contamination, formation and in-mould label inspection applications available. Manufacturers with strict product specifications will find the RPC capable of precision measurements and detection of contamination as small as .1 TAPPI (mm²).

Track & Trace and Quality Control
Pharmaceutical Packaging Industry

As a leading supplier of inline vision inspection solutions for the pharmaceutical industry, PCE provides comprehensive solutions for track and trace, serialization and aggregation tasks and vision inspection equipment for packaging lines.

Systems are available to mark packs with individual serial numbers for full traceability of the production or packaging process and collect critical corresponding process data. Solutions are available for all packs including single cartons to shipping cases and ready-to-ship pallets. The PCE management software (Pilot Line Manager and Pilot Site Manager) ensures that printing, labeling and verification of serialized data is performed correctly. The PCE Pilot software suite supports dedicated devices as well as data exchange to higher level IT systems.
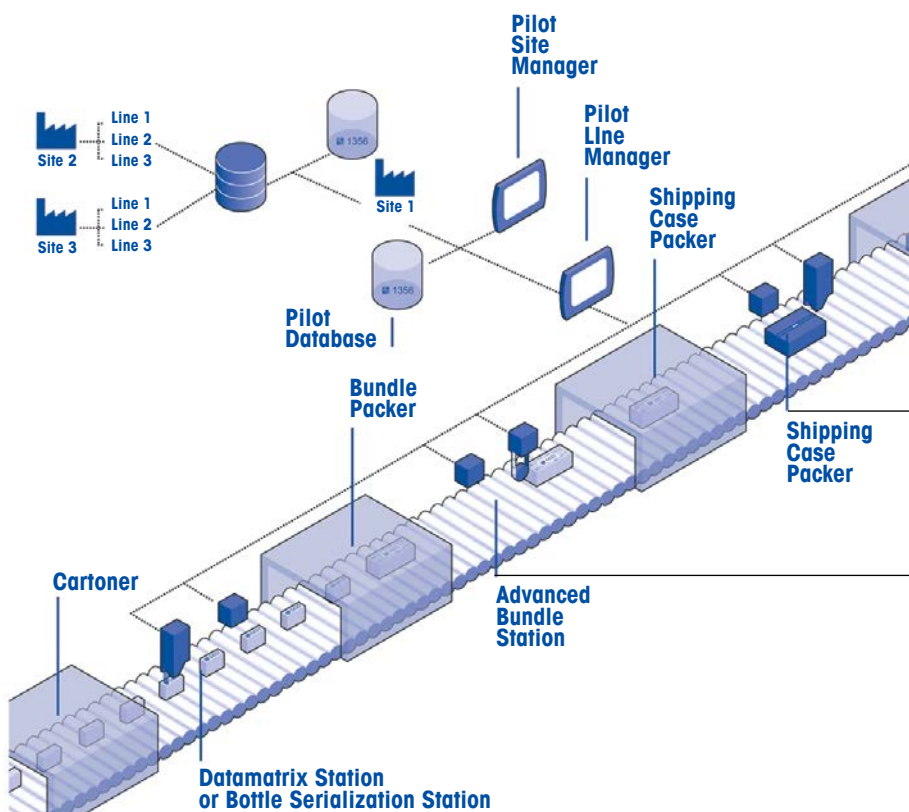
Datamatrix Station XMV
Safety Through Traceability

Marking, Verification and Sorting
A Fully Integrated Compact System

The Datamatrix Station XMV (DMS XMV) minimizes the potential risks in pharmaceutical packaging through Track & Trace measures and adherence to guidelines. The DMS XMV provides coding and serial number coding to meet product traceability in compliance with the EU Directive, USA ePedigree and other worldwide track and trace requirements. The product codes and variable data printed on the folding cartons are verified via cameras for accuracy and quality. The concurrent protocols meet GMP requirements and quality assessments.

The DMS XMV system can be easily integrated into new production lines or can be added to upgrade existing lines providing a full range of functions and user-friendly operation.

Manual Aggregation Station (MAS)
Transparency in Aggregation

Marking and Labeling – for Complete Traceability

The Track & Trace portfolio is completed by the Manual Aggregation Station (MAS). The MAS is designed for manual aggregation of boxes up to bundles, cartons and pallets and provides conformance with Track & Trace labeling. The MAS comprises of a scanner, printing system and Pilot Line Manager (PLM) allowing operation to take place at different positions down the line. The MAS is designed as stand-alone system to offer an optimum solution for the individual requirements of packaging lines. This ensures the maximum flexibility for the last aggregation step. The self-contained design ensures the system is ready for use without delays in production. Integration into existing lines is made possible with the PLM.

Pallet Packer

Manual / Pallet Aggregation Station
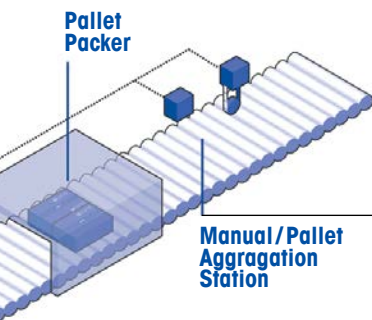
Shipping Case Station (SCS)
Transparency in Aggregation

Compact Control Unit for the Aggregation of Shipping Cases

The Shipping Case Station (SCS) is the module for the aggregation of shipping cases within the Track & Trace process and ensures transparency in the pharmaceutical packaging process. The high-resolution camera reads the 1D and 2D codes on all single folding boxes or bundles of a complete shipping case. The allocation of the folding box or bundle to the shipping case will be recorded and registered in an external database. The shipping case is marked with a unique serial number either by a direct printing or by the application of a printed label through an independent packaging unit. The code reading within the case packer ensures high process reliability as all packaging units are already placed inside the shipping case.

Advanced Bundle Station (ABS)
Transparency in Aggregation

Tracking and Labeling for Compliance with Aggregation Regulations

The Advanced Bundle Station (ABS) is a module for the aggregation of bundles within the Track & Trace process. A high resolution camera reads the 2D codes of all folded boxes in a complete bundle – even through the foil. Codes are verfied, and the allocation of the folded box to the bundle is recorded and registered in an internal database. The bundle is marked with a unique serial number – either by direct print on the bundle or through the application of a printed label by an independent packaging unit.

www.mt.com/pce

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Weights

Unrivaled Expertise
and Quality

METTLER TOLEDO is the world's leading manufacturer of precision instrumentation and a supplier of weights, weight sets and related weight-calibration services. The extensive weight portfolio covers weights from one milligram to five tons in all accuracy classes and includes a variety of grip handle weights.

Grip Handle Weights

OIML class F1
Stainless steel, high gloss finish
Density: 7.9 kg/dm^3

Features, Benefits and Applications

- Forged instead of casted production guarantees constant material density and best long term stability
- Weights delivered in sturdy, lockable box for best protection
- Ideal for clean room and wash down applications
- Perfect to satisfy highest requirements in regulated industries
- Each weight with serial number for traceability purposes

Grip Handle Weights

OIML class M1
Stainless steel, glass bead blasted, passivated
Density: 7.9 kg/dm^3

Features, Benefits and Applications

- Welded construction and glass bead blasted, passivated surface for heavy-duty operation within harsh environmental conditions
- Special passivation treatment of stainless steel ensures long-term corrosion resistance by losing its chemical reactivity
- No lead used, sealing plug made of aluminum to satisfy requirements in regulated industries
- Supreme for replacement of old cast iron weights
- Each weight with serial number for traceability purposes

Cylindrical Weights

OIML class F2, M1
Stainless steel
Density: 7.9 kg/dm^3

Features, Benefits and Applications

- Grip handle design for safe lifting and stacking
- Stackable weight carriers to accommodate weights of 20 kg, 10 kg or 5 kg, max. capacity of 200 kg
- Weights including weight carrier available as calibrated and certified version
- Suitable for regulated environments, such as the pharma, biotechnology or food industries
- Each weight coded with serial number for traceability purposes

Grip Handle Weights

OIML class M1–M3
Cast iron, coated
Density: 7.2 kg/dm^3

☐ Weight without certificate

☐ Weight with certificate

Features, Benefits and Applications

- Two-component coating for corrosion-, scratch-, and impact-resistant surface
- Smooth, weather-proof construction to reject dust and dirt, easy to clean
- Color coded weights for clear identification of OIML weight classes
- Flat top for easy and secure stacking
- Economic solution for general industrial applications
- Each weight with serial number for traceability purposes

Grip Handle Weights, Stainless Steel

Nominal value	F1		M1	
	Order number		Order number	
1 kg	11125424	11125429	30013625	30024245
2 kg	11125425	11125430	30013626	30024246
5 kg	11125426	11125431	30006805	30024247
10 kg	11125427	11125432	30006806	30024248
20 kg	11125428	11125433	30006807	30024249

Cylindrical Weights, Stainless Steel

Nominal value	F2		M1	
	Order number		Order number	
5 kg	11116650	11116656	11116600	11116601
10 kg	11116651	11116657	11116610	11116611
20 kg	11116652	11116658	11116620	11116621
50 kg	11116653	11116659	11116630	11116631
40 kg weight carrier	11116654	11116660	11116640	11116641

Grip Handle Weights, Cast Iron

Nominal value	M1		M2		M3	
	Order number		Order number		Order number	
5 kg	11125400	11125404	11125408	11125412	11125416	11125420
10 kg	11125401	11125405	11125409	11125413	11125417	11125421
20 kg	11125402	11125406	11125410	11125414	11125418	11125422
50 kg	11125403	11125407	11125411	11125415	11125419	11125423

Color Code OIML	F1	F2	M1	M2	M3

▲ www.mt.com/industrial-weights

Safe Lifting and 360° Access
for Heavy Capacity Weights

Handling heavy capacity weights to test scales always poses certain risks. To avoid manual handling operations, we have designed weights that offer a myriad of lifting options, including 360° access by fork lifts, cranes, and hoists. This helps to avoid injury by minimizing manual handling hazards.

Rectangular Weights

OIML class M1
Cast iron, coated
Density: 7.2 kg/dm^3

Weights are stackable and accessible by crane or fork lift.

Features, Benefits and Applications

- Standardized design to fit all fork lifts, convenient four-way access for safe and fast stacking
- Stackable to test max. loads of scales >10 tons
- Four handles on each weight to attach industrial lifting straps for crane lifting
- Fail-safe system by securely looping straps through handles when weights are stacked
- Each weight coded with serial number for traceability purposes

Rectangular Weights, Cast Iron

Nominal value	M1	
	Order number	
50 kg	11125498	11125499
100 kg	11125500	11125506
200 kg	11125501	11125507
500 kg	11125502	11125508
1,000 kg	11125503	11125509
2,000 kg	11125504	11125510
5,000 kg	11125505	11125511
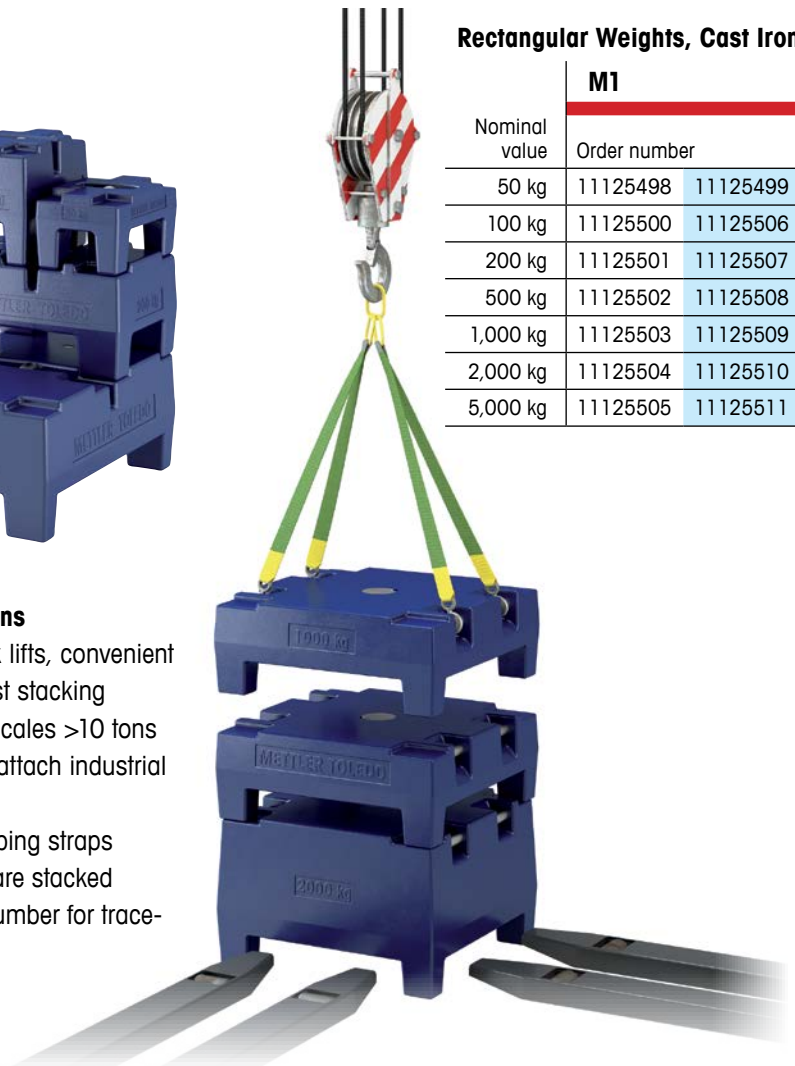
Cylindrical Weights

OIML class F1, F2
Stainless steel
Density: 7.9 kg/dm³

Features, Benefits and Applications

- Highest quality heavy capacity stain-less steel weights
- Safe lifting by crane using top hook
- Perfect for applications within the food industry
- Testing of commercial weighing devices by Weights & Measures officials
- Nominal values 100 kg up to 2,000 kg

Rectangular

OIML class F1, F2
Stainless steel
Density: 7.9 kg/dm³

Features, Benefits and Applications

- Combinable weights make it easy to achieve a specific individual total reference test weight
- A low center of gravity ensures safe stacking and requires the minimum of storage space
- Use as reference weights for calibrating test weights in lower OIML classes
- Nominal values 100 kg up to 1,000 kg

Accessories

Lifting Straps

Durable, high-quality lifting straps are the smart choice for safe lifting of heavy capacity weights.

Max. load	Length	Order number
5 t	1 m	11125600
5 t	2 m	11125601
5 t	3 m	11125602
5 t	4 m	11125603

Other lifting straps available upon request.

Four strings, 100% polyester, strong as steel, non-wearing, smooth and flexible. Eyelets and hooks made of hardened steel.

Max. load	Length	Order number
5 t	1 m	11125604
5 t	3 m	11125605

For quotes, technical information or other weights: ▶ **weights@mt.com**

Printers
and Accessories

Foto: Joachim Wendler (Fotolia)

Printers
For Clearly Documented Results

```
Nominal          50.00 ml
Density      0.94000 g/ml
Tare   (x̄)       16.80 g
1      51.64 ¦ ¦  ¦░ ¦ ¦
2      50.67 ¦ ¦  ░ ¦ ¦
3      49.73 ¦ ¦  ░ ¦ ¦
4      48.27 ¦ ¦ ░¦ ¦ ¦
5      48.32 ¦ ¦ ░¦ ¦ ¦

x̄    99.45 %    49.726 ml
s     2.96 %     1.471 ml
Min  96.53 %     48.27 ml
Max 103.28 %     51.64 ml
R     6.74 %      3.37 ml

<T2-        0      0.00 %
<T1-        0      0.00 %
>T1+        0      0.00 %
>T2+        0      0.00 %


 s chart      x̄ Chart
¦*       ¦ ¦ ¦  ░ ¦ ¦
¦   *    ¦ ¦¦░ ░ ¦ ¦
¦   *    ¦ ¦ ¦  ¦ ░¦ ¦
¦     *  ¦ ¦  ¦  ¦░░¦
¦   *    ¦ ¦ ¦  ░ ¦ ¦
¦   *    ¦ ¦ ¦ ░ ¦ ¦
¦  *     ¦ ¦ ¦  ¦ ░¦ ¦
¦  *     ¦ ¦ ¦ ░¦ ¦ ¦
¦  *     ¦ ¦ ¦ ¦░ ¦ ¦
¦  *     ¦ ¦ ¦ ¦░ ¦ ¦
0    3.50   -   Nom   +

Stat1  Sample #        9
x̄  101.53 %   50.766 ml
```

APR310
Ticket Printer

Designed for reliability, the APR310 Ticket Printer is perfect for industrial applications. The open design of the print mechanism enables easy paper feeding. A remote print button supports METTLER TOLEDO weighing products. The compact design is space efficient and integrates well into work areas.

Type	Serial impact dot-matrix 9-pin
Print Speed	3.1 lines/sec.
Copies	Original + 2 copies
Print Head	9-pin dot matrix
Max. Print Width	35/66 column, line spacing 0.30–0.35 mm
Media	Paper, 70 to 210×70–297 mm (w×l)
Memory	4K
Fonts/Character Size	International character fonts, size varies by font
Barcodes	–
Dimensions (w×d×h)	180×190×138 mm
Power	90–264 V AC, 50/60 Hz; 24 V DC 2.0 A
Approvals	Varies by font
Interfaces	RS232 25-pin serial
Accessories	–

```
Mean          101.32 %     50.661 ml      Tolerance violation
Std. Dev.       5.60 %      2.836 ml      <T2-        0         0.00 %
Minimum        88.70 %     44.35 ml       <T1-        1         1.67 %
Maximum       123.54 %     61.77 ml       >T1+        4         6.67 %
Range          34.84 %     17.42 ml       >T2+        1         1.67 %

Class table
<T2          0.00 %          0          +1        23.33 %        14
<T1          0.00 %          0          +2        15.00 %         9
<T1          1.67 %          1          +3        10.00 %         6
-4           3.33 %          2          +4         5.00 %         3
-3           6.67 %          4          >T1        3.33 %         2
-2          11.67 %          7          >T1        1.67 %         1
-1          16.67 %         10          >T2        1.67 %         1

Histogram
<T2
<T1
<T1
-4
-3
-2
-1
```

8808 Heavy Duty Multi-Part Form Printer

A powerful printer for multi-part forms and the best choice for vehicle or industrial applications. Using a high-speed bidirectional print head, the 8808 printer has the power to print through thick tickets and forms. Features like 40/66 column print width, inverted printing, and emphasized print mode make it a very versatile printer.

8857 Impact Strip Printer

The 8857 Strip Printer is ideal for producing a printed record of weighing transactions. The impact printing will not fade over time like thermal printing. So whatever the application, important results are safe for later reference. Drop in auto-paper loading and few moving parts make this a durable and easy-to-use printer.

APR710 Heavy Duty Thermal Printer

The METTLER TOLEDO APR710 is an ideal solution when rugged, precise and accurate label printing is required. With the lowest total cost of ownership in its class, a compact footprint and multiple connectivity options, the APR710 packs the power of a high-volume industrial printer into an easy-to-service modular design. A wide range of media options, including direct thermal or thermal transfer, ensure the printer is ready for the most demanding industrial operation.

8808	8857	APR710
Heavy duty dot matrix impact ticket/slip printer	Serial impact dot-matrix	Direct thermal or thermal transfer
Approx. 2 lines/sec.	4.7 lines/sec. (40 columns), 8.6 (16 columns)	Up to 254 mm/sec.
Up to 1 original + 4 copies	Original + 1 copy	–
9 pin bidirectional impact	9-pin serial	8 dots/mm
Line length: 84.5 mm/40 columns or 133 mm/66 columns; Line spacing: 6 lines/inch	Line length: 40 columns Line spacing: 0.30–0.35 mm	Max. print width 108
Paper: min. 80×69 mm, max. 182×257 mm	Paper: 76 mm	Roll or fan-fold, die-cut or continuous labels 0.06 to 0.25 mm thickness, 19 to 118 mm width
Max. 4K	Max. 4K	Up to 16 MB DRAM, 8 MB Flash
9×9 dot matrix default (expanded fonts through control codes)/1.6×3.1 mm	International character fonts, size varies by font	Resident Fonts: Ten alphanumeric fonts from 0.03″ (0.9 mm) to 0.25″ (6 mm) Resident scalable fonts
–	–	Barcodes: Code 3 of 9, UPC-A, UPC-E, Interleaved 2 of 5, Code 128, EAN-8, EAN-13, HIBC, Codabar, Plessey, UPC 2 and 5 digit addendums, Code 93, Postnet, UCC/EAN Code 128, Telepen, UPS Maxi-Code, FIM, PDF417, USD-8, Datamatrix, QR Code, Aztec, TLC 39, Micro PDF417, RSS
185×252×266 mm	160×248×138 mm	262×249×459 mm
100–240 V AC/50–60 Hz	100–240 V AC, 50-60 Hz; 24 V DC 1.3 A	90–132 or 180–264 V AC @ 47–63 Hz
UL, CUL, CE, TUV, FCC Class A	Varies by font	UL, CE, FCC
RS232 serial, DB25 female connector	RS232 25-pin serial	USB, Centronics® IEEE 1284 Parallel port, RS232 at 1,200 to 38,400 BPS
–	–	Peel and present, Internal Rewinder, Cutter, Internal LAN, Internal Wireless LAN

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ARM100
Remote Discrete I/O Module

Add an additional remote discrete I/O to your system.
The ARM100 Remote Discrete I/O Module is designed to extend the control network of METTLER TOLEDO industrial terminals. This high performance module provides four inputs and six outputs at a remote location from a compatible terminal. Digital control information is received from the terminal on an RS485 communication link.

Dimensions	Enclosure	Height	Width	Depth
	Module Only	2.9″ (74 mm)	3.9″ (100 mm)	2.2″ (57 mm)
	Harsh	6.3″ (159 mm)	7.0″ (178 mm)	2.8″ (70 mm)
Mounting	N35 DIN rail mount; Optional 304 stainless steel wall mount enclosure			
Power	24 V DC 140 mA, Class 2 power supply (not included)			
Serial Data Input	Multi-drop RS485 interface; Module is addressable from 1 to 15; Parameters: 57,600 baud; 8 data bits, even parity, 1 stop bit			
Discrete Inputs	4 optically isolated solid state inputs; Input voltage range from 5 to 24 V DC (30 V DC at 40 mA maximum); 4 LEDs indicate input status; External voltage source and ground required			
Discrete Outputs	6 normally open, dry contact relays; Contact rating: 250 V AC or 30 V DC at 1 amp maximum; Total current not to exceed 3 amps; 6 LEDs indicate output status; External voltage source required			
Applicable Terminal	IND560, IND780, IND690, IND890			
Agency Approvals	$_c$UL$_{us}$, CE			

A100
Analog Output Module

Analog output module – converts serial weight data into a 4–20 mA analog output signal.

Input Signals	RS232 (up to 9600 baud), RS485, 20 mA current loop, fiber optic. Supports METTLER TOLEDO continuous protocol or SICS Level 0
Output Signal	4–20 mA; 0–500 Ω impedance
Discrete Outputs	1 Input/1 Output, Open Collector, 5–25 V DC; 75 mA maximum sink current
Dimensions/Size	74 × 54 × 100 mm (W×D×H)
Enclosure Types	Standard: Plastic, DIN Rail Optional: SS Type 4X (larger dimensions) Optional: Cast Aluminum Type 9 (larger dimensions)
Power	20–28 V DC / 300 mA, UL Class2
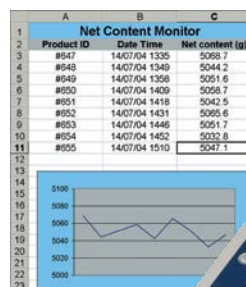
BalanceLink
Communication Software

BalanceLink allows data communication between a variety of METTLER TOLEDO instruments and your application program, including MS Word™, MS Excel™, MS Access™ and many more.

Properties:
– Data transfer at the touch of a button – at a particular time or at defined intervals
– Date and time stamp for each measurement result
– Data can be automatically written to a text file
– Customer-specific formulas for the automatic conversion of measured values
– 5 languages: German, English, French, Spanish, Italian
– Online help

Supported Devices
– METTLER TOLEDO balances (requirement of SICS instruction set)
– Balances from third-party manufacturers (open interfaces)
– Analytical instruments and moisture detection devices

Active Prevention

ISB(x)
Intrinsic Safety Barrier

The ISB (Intrinsic Safety Barrier) is designed specifically for use in high accuracy/high resolution weighing applications. When installed in a load cell cable between a terminal in a safe area and analog load cells in a hazardous area, the ISB limits the energy delivered into the hazardous area to prevent ignition of a potentially explosive atmosphere. The ISB05 and ISB15 are used for general purpose, safe area use, approved as [EEx ia] IIC in Europe and AIS/I,II,III/1/ ABCDEFG in the U.S.. The ISB5X and ISB15X feature NEMA Type 7/9 flameproof enclosures for hazardous area use, approved as EEx d IIB+H2 [ia] IIC T6 in Europe and XP/I/1/ CD T6; DIP/II,III/1/EFG T6 in the U.S.

Dimensions (W×D×H)	**ISB05/15:**	110×115×35 mm
	ISB05x/15x:	150×195×140 mm
Construction	**ISB05/15:** Covers are ABS plastic	
	ISB05x/15x: Cast aluminum alloy with no more than 6% magnesium by weight	
Operating Voltages	1–5 V DC (ISB05), 5–15 V DC (ISB15)	
Environment	**ISB05/15:** Dry, non-hazardous areas only	
	ISB05x/15x: Within hazardous areas	
Haz. Area Approval	NMi, NTEP, KEMA, FM, CSA	
Housing	NEMA Type 7/9	
Signal Processing	Analog	
Accessories	Kit with two 3/4″ NPT conduit sealing fittings, Kit with two 3/4″ NPT to 20 mm thread adapters	

RAAD Box™
Smart Sensor Network

With the RAAD Box™, conventional strain gauge load cell systems can be transformed into advanced sensor networks. Instead of analyzing the combined signal from every load cell in the system, the RAAD Box embeds intelligence into each individual load cell, enabling you to analyze your system at the lowest level. Failures can be detected immediately, guarding you against costly downtime or product waste. For use with IND780 terminal with MTX scale option only.

Resolution	Full scale resolution of A/D 500,000 counts per cell
Dimensions	309.8×220×88.7 mm (W×D×H)
Protection	NEMA 4X enclosure
Power	Supplied from hosting terminal's data connection

Remote Displays
For Weight Results from a Distance

Remote displays allow truck drivers and other personnel to see weights at locations other than where the scale terminal is mounted. The bright LED display is easy to read day and night. Three sizes of displays are available with viewing distances of 22 to 76 m. Options include a built-in red/green traffic light and wireless communication between the display and the scale terminal. A durable aluminum enclosure makes the remote displays suitable for indoor and outdoor use.

ADI210, ADI215*, ADI310, ADI315*, ADI320**, ADI410, ADI415*, ADI420**
*with wireless option **with traffic light
In eight sizes from 305×148×122 mm to 1,113×176×265 mm (WxDxH)

Display	Light-emitting diodes (LED), six large characters, Gross/Net display
Housing	Aluminum
Protection	IP56/NEMA 4
Interfaces	Serial RS232, RS422 (multi-drop), 20 mA CL
Power	100 V AC to 240 V AC, 50/60 Hz, auto sensing

www.mt.com/industrial

Glossary of Terms

Analog Load Cell
Weight sensor consisting of strain gauges arranged in a Wheatstone bridge configuration.

Analog Output
Current or voltage signal used to represent a numeric value in legacy control systems. Analog outputs are typically low resolution.

Bluetooth
A short range wireless communications standard used for peripheral devices instead of wired solutions such as RS232 or USB.

ControlNet
Open standard fieldbus used for large data sizes on complex devices used by Allen-Bradley and others.

CTPZ
Clear, Tare, Print, Zero. Simple, single ASCII character serial command set. Also includes Select and Units switching commands in some terminals.

DAC
Digital to Analog Converter, used to produce analog signals for analog outputs.

DeviceNet
Open standard fieldbus used for smaller data sizes on simpler devices used by Allen-Bradley and others.

Discrete I/O
Used to monitor devices such as switches and used to control devices such as valves and motor starters. Low level I/O generally refers to 5–24 VDC levels. High level generally refers to 115 VAC or greater switching capacity. Discrete I/O is also known as digital I/O.

Ethernet
The communications protocol for lowest layers of the 7 layer Open System Interconnection (OSI) model. The seven layers are (starting with the lowest): Physical, Datalink, Network, Transport, Session, Presentation, and Application.

Ethernet TCP/IP
The communications protocol including the upper layers of the OSI model. Transmission Control Protocol (TCP) organizes packet delivery and Internet Protocol (IP) establishes the connection between devices. A typical use is in an office network.

Ethernet/IP
Open standard Ethernet based PLC fieldbus that uses TCP/IP with a special Industrial Protocol (/IP) application. This Industrial Protocol is essentially the same as is used in ControlNet. Use of this fieldbus requires a device to specifically support Ethernet/IP. Used by Allen-Bradley and others.

Fieldbus
Automation network consisting of a physical layer and communications protocol. Several popular fieldbuses use RS485 or Ethernet as the physical layer. Some fieldbuses are open standards, while others are proprietary.

Floating Point
An IEEE-754 32 bit single precision (as used by METTLER TOLEDO) real number consisting of a sign bit, 8 bit exponent, and 23 bit mantissa.

IDNet
A METTLER TOLEDO measuring cell communications protocol used with high precision products.

Integer
A 16 bit (as used by METTLER TOLEDO) whole number consisting of a sign bit and 15 significant bits. There is no decimal point.

MMR
METTLER TOLEDO Multi Range product line – scale terminals with their own protocol.

Modbus Plus
A proprietary fieldbus used by Modicon and others. It is not compatible with Modbus RTU or Modbus TCP.

MonoBloc
A METTLER TOLEDO electromagnetic force restoration (EMFR) weighing cell design.

PLC
Programmable Logic Controller used for process control. Typically consists of a processor running the control program, a fieldbus scanner (master), and discrete I/O. Similar to a DCS (Distributed Control System).

Profibus DP
A Siemens and German government developed open standard fieldbus. It is not compatible with Profibus PA or ProfiNET. Used by Siemens and others.

Protocol
Message format and rules that determine which device transmits or receives, and when this occurs.

PS/2
A serial port standard used by a keyboard or mouse. Some bar code scanners use PS/2 ports.

RIO
Remote I/O, an Allen-Bradley fieldbus. It is not the same as Data Highway +, nor does METTLER TOLEDO support DH+.

RS232
An ISA serial data transmission hardware standard suited for short distance and supporting a point to point connection only. A communication protocol is not a part of the RS232 specification.

RS422, RS485
ISA balanced line multiple node serial data transmission hard-ware standards. Communication protocols are not a part of the RS422 or RS485 specifications.

Shared Data
Internal scale terminal memory used to pass information between internal modules within the scale terminal and remote applications.

SICS
Standard Interface Command Set, a METTLER TOLEDO serial protocol.

USB
Universal Serial Bus, a serial data transmission hardware standard.

WLAN
Wireless Local Area Network. Typically based on IEEE 802.11 standard. WLAN is also known as Wi-Fi.

Product Index

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METTLER TOLEDO provides a wealth of free tools and documentation about the latest techniques, how to optimize applications and for training. Our Website www.mt.com is a great resource for know-how and best practice, such as industry magazines, online library, white papers, and webinars.

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