Buyer's Guide

Transport & Logistics Buyer's Guide

For System Integrators

METTLER TOLEDO

Content Overview

Introduction

Weighing and Measuring for Transport and Logistics

Are read rate, throughput, sorting efficiency and data quality key themes for your customers? If you are supplying material handling systems for the transport industry, METTLER TOLEDO can help with industry-leading weighing and measuring components that are designed for easy integration. In this comprehensive guide you will find, in addition to an overview of the products we offer, the full range of services and support we provide to system integrators for seamless, timely and professional project execution.
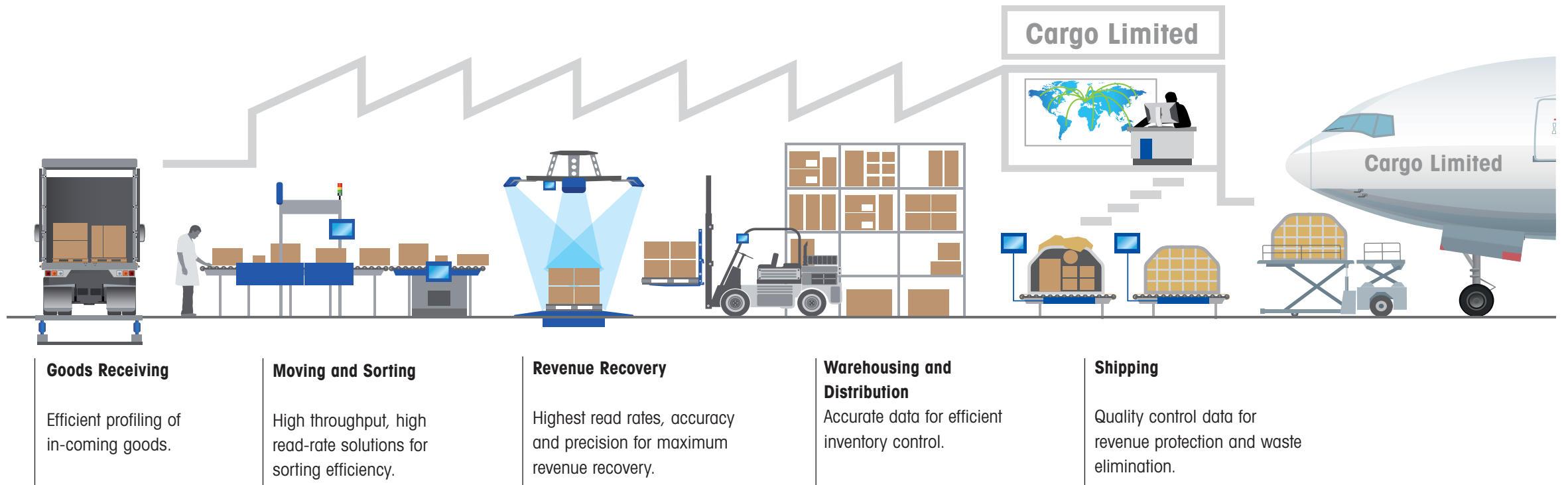
▶ **www.mt.com/transport**

Goods Receiving

Efficient profiling of in-coming goods.

Moving and Sorting

High throughput, high read-rate solutions for sorting efficiency.

Revenue Recovery

Highest read rates, accuracy and precision for maximum revenue recovery.

Warehousing and Distribution
Accurate data for efficient inventory control.

Shipping

Quality control data for revenue protection and waste elimination.

Table of Contents

Weighing at High Speeds

Deliver Accuracy with Smart Filter Technology

As sorting systems get faster, weighing equipment needs to keep up. METTLER TOLEDO dynamic scales use smart weighing filters to reduce interference and deliver accurate weighing results at high speeds.

Key Benefits
• Accurate weighing at high speeds
• Low measuring time
• Minimal reinforcement needed to weigh in tough conditions.

Recommended Solutions

The Problem

Automatic sorters, which use powerful motors and high-speed conveyors, generate vibrations and destabilize weighing conditions. This makes it more difficult to achieve accurate, repeatable weighing results in high-speed environments.

METTLER TOLEDO Solution

Advanced Filter Technology filters out residual vibrations, enhancing the performance of load cells in high-speed weighing environments. Sonic Analysis and Service Tool (SAST) is for all SONIC-based load cells for analyzing weighing conditions, optimizing system settings and for easy integration for OEM customers.

How it Works

When a parcel enters the scale, the impact of the shaking from the sorting system is immediately filtered out. The edge-compensation feature offsets the vibrations running through the parcel. This means that it can be quickly and accurately weighed without the need to reduce parcel speed.

For more info, visit: ▶ www.mt.com/transport

High-Throughput Weighing

Reach Top Throughputs with a XS100 DualScale

In high-volume sorting environments handling parcels of varying lengths and sizes, a dual-scale provides a compact solution that provides top throughputs without compromising on space.

The Problem

In a typical sorter, parcels come in many sizes. Weighing belts need to be as long as the length of the longest parcel meaning that small items, although weighed quickly, have to run the length of the scale belt before the next parcel can be weighed. This decreases sorter throughput.

METTLER TOLEDO Solution

A scale with two weighing belts of different lengths selects the optimal belt for each parcel based on size. Small parcels are weighed on the shorter scale. Those over a predefined length are weighed on the longer scale. The longest parcels are weighed using both weighing belts.

How it Works

A XS100 DualScale uses a flexible weighing point to optimize the weighing position. A weigh-light barrier, positioned before the scale, registers parcel length and the system determines the optimal weighing belt. Data is transferred after the parcel reaches the data transmit point.

For more info, visit: ▸ **www.mt.com/XS-DualScale**

Dimensioner Read Rate

Achieve Highest Revenue Recovery and Sorter Efficiency

The more parcels a dimensioner sees, the more revenue it can potentially recover. But it's not only revenue that is lost if a dimensioner isn't achieving top read-rates. When no-reads are sent around the sorter again for a second try, or redirected for manual handling, sorter capacity can decrease by 2-4 percent, decreasing throughput.

The Problem

Some dimensioners struggle with wrappings that are difficult-to-measure. Any parcel that is dark or reflective may result in a no-read. No-reads are either unmeasured, redirected for manual processing or are sent around the sorter again, decreasing throughput.

METTLER TOLEDO Solution

Our dimensioners have been proven to reduce the number of no-reads in head-to-head tests by up to 10 per cent. By increasing dimensioner read rate your customers can recover more revenue and save costs by reducing the number of re-sorts.

How it Works

Dark surfaces are difficult because they return less light to the dimensioner. The large optics of our dimensioners let in more light, enabling accurate measurement of dark surfaces. Shiny surfaces reflect light: highly precise lasers and a sensitive CPU compensate for over-exposure.

For more info, visit: ▶ www.mt.com/TLD950

Smalls Measuring

Measure Parcels Between 2-5 Centimeters, Legal-For-Trade

If your customer processes a large number of small parcels, help them to recover revenue on those, too. Most dimensioners are only approved to measure items down to five centimeters in height. METTLER TOLEDO dimensioners have a two milimeter height accuracy approval, allowing for revenue recovery on parcels down to two centimeters in height.

The Problem

The average shipment size is getting smaller. If a typical sort conntains a reasonable number of parcels that are under five centimeters in height, your customer could be losing revenue if their dimensioner is not approved to measure them legal-for-trade.

METTLER TOLEDO Solution

METTLER TOLEDO dimensioners carry an MID height accuracy approval of two milimeters. This means that revenue can be recovered legal-for-trade on parcels down to two centimeters high. If your customer has number of parcels between two and five centimeters high, our dimensioners will increase revenue recovery.
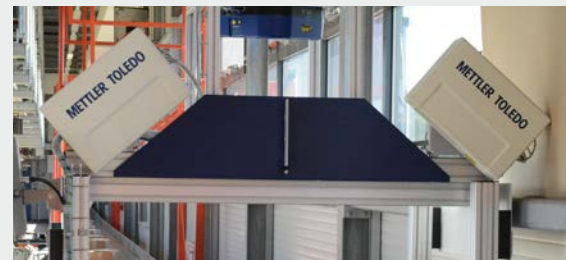
How it Works

Highly precise lasers and a large data receiver enable our dimensioners to accurately measure all but the smallest objects. We have the widest range of legal-for-trade approvals in the industry.

For more info, visit: ▶ www.mt.com/TLD950

Weighing on a Mezzanine

Ensure Accuracy in Toughest Conditions

No sorting environment challenges a scale in the same way as when it is installed on a mezzanine. Look for features that ensure accurate weighing results when mounted on challenging structures.

The Problem

To maximize the space in a sorting facility, systems often run on multi-layer mezzanines or tower structures. Scales installed on a mezzanine are more prone to vibrations, which makes it more difficult to achieve stable weighing results.

METTLER TOLEDO Solution

In combination with Advanced Filter Technology, which filters out residual vibrations, the extremely robust design of our scales stabilizes weighing results. In particularly demanding site conditions, a structure should be provided that isolates the scale from the mezzanine.

How it Works

Filter technology stabilizes frequencies above 15-20 hertz. If lower frequencies are present, we will work with you to determine the best way to reduce physical contact between the structure on which the scale is mounted and the mezzanine to ensure accurate weighing results.

For more info, visit: ▸ **www.mt.com/XS-DualScale**

Belt Wear and Tear

Special Belt Design Minimizes Downtime and Cost

In high-speed sorting environments, conveyor belts are prone to wear and tear. Having to regularly change a belt - in some cases up to two or three times per year, results in downtime and added costs. Look for a scale with a belt design that doesn't require frequent changing.

The Problem

Damage to conveyor belts is a common sight in parcel sorting facilities. Either they become loose and wobbly, or they get ripped because they are not strong or secure enough. When they are damaged, they need to be changed at a cost and inconvenience to your customer.
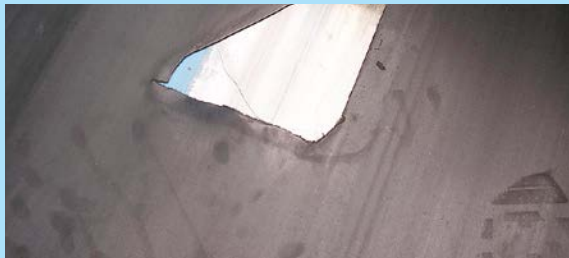
METTLER TOLEDO Solution

A special belt guidance feature, combined with exceptionally stiff material and fixings, protects the belts of our high-throughput scales from wear and tear. There is no need to frequently change the belt. Unless something exceptional happens, the belt can last for many years.

How it Works

The belt guidance feature keeps the belt running in a straight, rigid line. This stops it from becoming loose and getting caught in the transfer plates or disturbing parcel flow.
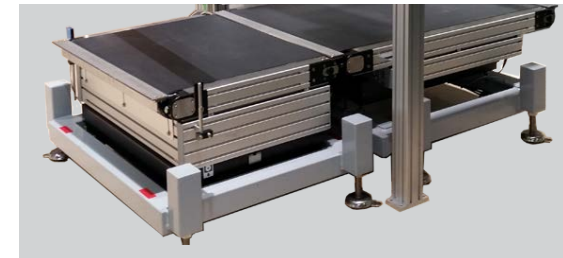
For more info, visit: ▶ **www.mt.com/XS-DualScale**

Data Drop-Off

Fast, Efficient Sorting and Data Transfer

When a scale or a dimensioner is integrated into a sorting environment, it is important that the system communicates well with the sorting equipment. Two-way communication, with quick data transfer at a pre-determined point, ensures efficient system interaction.

Key Benefits
- Preconfigured data drop point
- Accurate sorting data
- Reduced risk of mis-sorts

Recommended Solutions
TLW450 (page 32)
XS100 DualScale (page 36)

The Problem

Every second counts in a high-speed sorting environment. If a scale cannot transmit data within a pre-defined time window, data will be lost and the parcel will have to travel through the sorter again, decreasing throughput. The host system expects a telegram at a defined position in relation to the leading or trailing edge of a parcel.

METTLER TOLEDO Solution

Sonic Analysis and Service Tool (SAST) software allows for more complex filter adjustments, making fine-tuning of the scale more precise and keeps gaps as short as possible at greater speeds. The data drop point can be configured based on sorting requirements.

How it Works

The controller receives data about the parcel's position in real time using either a light barrier or pulse encoder. It is preconfigured to transfer data at a pre-determined point on scale or the sorter. Data is merged with sorting and tracking information. Standard protocols are Fieldbus based.

For more info, visit: ▶ www.mt.com/dynamic-weighing

Goods Receiving

Inbound Inventory Control

Maintaining inventory control means knowing exactly what is coming into a warehouse and in which quantity. Scales and dimensioners can record the data of incoming goods on an inbound conveyor line or manual processing station.

TLW360

While speeds on an inbound line are typically lower, the need for accurate weight data is just as high. With accuracy down to ±5g, the TLW360 offers a reliable solution for registering the weight of goods coming into a warehouse.

▶ **www.mt.com/TLW360**

Key Benefits

- Combined weight, size and shipment data
- Piece counting for quality control
- Integrated with Warehouse Management Software
- Manual or automatic lines

Recommended Solutions

TLW360 (see page 28)
ICS425 (see page 50)
TLD950 SingleHead (see page 40)
TLD950 MultiHead (see page 44)

Dimensioning Over Cross-belts

Measurement in High Volume Sorting Hubs

Measure parcels at high speeds with a dimensioner mounted over your primary cross-belt sorter. Choose between a single dimensioner for measurement of cuboidal packages, or a multi-headed dimensioner for measurement of parcels of all shapes. METTLER TOLEDO dimensioners offer legal-for-trade measurement over cross-belts and industry-leading read rates to minimize the number of parcel no-reads.

TLD950 MultiHead

Making easy work of parcels of any shape, with any wrapping, and approved to measure over crossbelts running at speeds of 3.3 m/s, the TLD950 MultiHead is the ideal dimensioner for measuring over hall-sensor and fork-sensor cross-belts.

▶ **www.mt.com/TLD950**

Quality Control

Outbound Completeness Checking

Dynamic scales register when parcel weight is not what it should be, allowing distribution centers a final quality check to ensure that the order going out is the right one. Static scales take it one step further and check the quantity of items in each shipment.
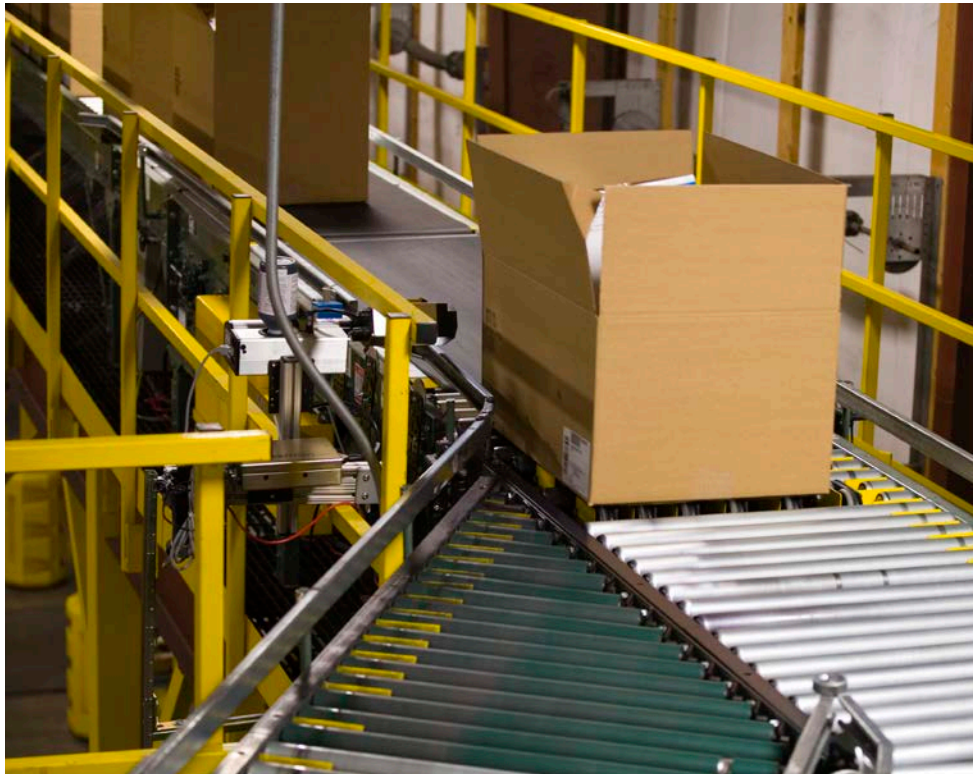
TLW160

The TLW160 is a compact roller conveyor scale that offers basic weighing for completeness checking and outbound quality control.

▶ **www.mt.com/TLW160**

Key Benefits

- Weight, size and shipment data in one string
- Seamless integration with invoicing and shipping sofftware
- Manual or automatic shipping lines

Recommended Solutions

TLW160 (see page 25)
TLW360 (see page 28)
TLW450 (see page 32)

Shipping

Outbound Revenue Protection

Checking the weight and dimensions of outbound shipments helps distribution centers to declare correct data to their transport provider, avoid unwanted back charges and correctly allocate the cost of transportation within their pricing scheme.

TLW450

The TLW450 helps shippers to stay in control of transport costs and is easily combined with dynamic dimensioners for added revenue protection. Accurate and capable of high speeds, the TLW450 is ideal for high volume distribution centers.

▶ **www.mt.com/TLW450**

METTLER TOLEDO Services

Services by Product

Services are defined based on system type. This overview will help you, or your customer, to understand which services are available for each product group to support uptime, performance over time and regulatory compliance.

	Dimensioners	Dynamic Scales	Bench scales
Installation Professional mechanical and electrical installation	●	●	●
StarterPac Confirmation Delivery Configuration, commissioning and basic training of instrument	●	●	●
Comprehensive Test Report / Accuracy Calibraiton Certifciate Periodic calibraiton assessment			●
Dimensioning System Test Report System performance report	●		
Automatic Weighing Instruments Calibration Certificate		●	
Customized Training Specialized operator and maintenance training	●	●	●
Remote Support Helpdesk Subscription to technical support hotline	●	●	●
Un-install equipment Uninstallation of system	●	●	●

System Uptime

METTLER TOLEDO Maintenance Packages

How crucial is uptime to your customer's operation? This will depend on parcel volumes, the time-criticality of operations and the size of a facility. We offer tailored service packages tailored to the budget and uptime requirements of your end-customers.

▸ **www.mt.com/tl-service**

Coverage	BasicCare	StandardCare	ComprehensiveCare
Preventive maintenance • Inspection and cleaning of all mechanical components • Inspection and testing of electronic components • Inspection for wear and damage	●	●	●
Equipment operational testing	●	●	●
Preferred service intervention	●	●	●
Discounted repair labor	●		
Technical support hotline access		●	●
Repair labor coverage in case of equipment break-down		●	●
Spare parts coverage			●
Calibration and verification	Added according to your requirements and regulations		

Installation

Quick, Expert Installation and Calibration

Professional installation and equipment setup performed by a highly skilled service technician ensures error-free operation from the beginning. Initial calibration and performance verification confirm that the system has been set up optimally and meets your customer's process requirements. If a system integrator would like to install basic products, METTLER TOLEDO may offer training for them to do so.

▶ **www.mt.com/tl-service**

Our Offering

- **Equipment Installation**
  Installation using standardized procedures and operational checks

- **Standard System Configuration**
  Configured device settings to meet application requirements

- **Calibration and Certification**
  Follows procedures and certificates meeting quality, industry and regulatory requirements

- **Overview Training**
  Provides operators and maintenance personnel with an operational and maintenance overview

- **Documented Installation**
  Systematically documented installation

Your Benefits

- **Immediate Deployment**
  Quick release into your material handling system

- **Peace-of-Mind**
  Installation using standardized procedures and operational checks

- **Improved Productivity**
  Optimal equipment set-up

- **Audit Confidence**
  Clear, well-documented installation and testing procedures

- **Operator Efficiency**
  Professional training reduces operator error and uncertainty

Maintenance and Repair

Preventive Maintenance and Repair Coverage

Periodic inspections by factory-trained technicians help to prevent unplanned downtime and reduce repair costs. If a system integrator would like to perform routine maintenance and basic repairs, METTLER TOLEDO may provide a basic training program.

▸ **www.mt.com/tl-service**

Benefits of Proactive Maintenance
Increase accuracy, reliability and process efficiency with regular maintenance from METTLER TOLEDO Service:

- Optimum equipment performance
- Reliable operating procedures
- Traceable measurement accuracy
- Proactive protection against equipment failure
- Higher testing throughput
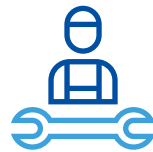
Training to perform service
Periodic inspections by trained technicians help to prevent unplanned downtime and reduce repair costs. METTLER TOLEDO offers training to system integrators to perform routine maintenance and basic repairs.

Repair coverage
Select a pre-paid service plan which protects you and your customer from unbudgeted expense. If equipment fails, we will respond and repair at no additional cost.

System Test Reports

Service Recommendations for Proactive Planning

Dimensioning, weighing and barcode-reading test reports provide a complete overview of a system's health. METTLER TOLEDO technicians test the accuracy, performance and field of view of measuring systems and generate a report based on the results. Your customer will receive clear service recommendations, helping to ensure uptime and continued high performance.

▶ **www.mt.com/tl-service**

Benefits of System Test Reports
Be accurate and compliant with METTLER TOLEDO's calibration & certificate service:

- Regulatory compliance by using certified and accredited calibration procedures
- Professional, easy-to-read certificates
- Audit-proof documentation
- Reliable measurement results thanks to regular instrument calibration
- Avoidance of inaccurate measurements and their cost potential
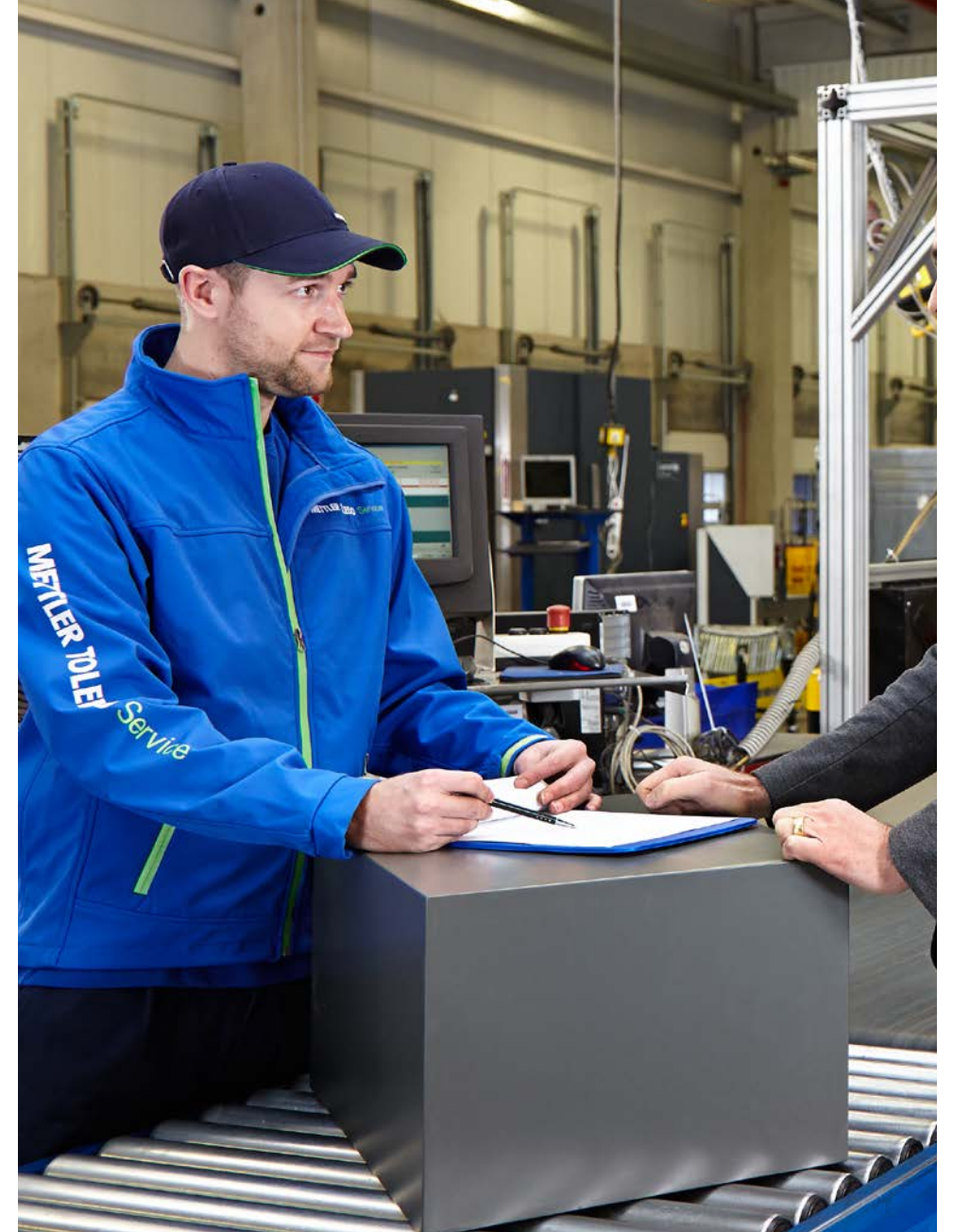
Automatic Weighing Instrument Calibration Certificate (AWICC)

Optimize Performance with Essential Services

AWICC provides the core calibration testing in both static and dynamic modes according to the EURAMET-cg-26. METTLER TOLEDO supports you with comprehensive services and documentation to calibrate and adjust your automatic weighing instruments based on our proprietary processes. Discover how implementing the recently released EURAMET Calibration Guideline can help you ensure the accuracy and reproducibility of your weighing results while optimizing processing speed, profitability, and compliance.

▶ **www.mt.com/Calibration**

Benefits of AWICC

Proper calibration according to EURAMET guidelines can help you:

- Optimize your processes
- Capture additional shipping revenue
- Reduce expenses related to rework/waste
- Enhance your profitability and compliance

Spare Part Management

Plan for Uptime with Spare Part Kits

METTLER TOLEDO offers a comprehensive range of spare part kits to maintain equipment performance by ensuring high operational efficiency, minimizing unexpected failures and keeping service time to the absolute minimum. Effective spare parts management, combined with regular service, is crucial for maintaining the uptime of your customer's equipment.

▸ **www.mt.com/tl-service**

Minimize Downtime

- Handle smaller repairs yourself in-house
- Guaranteed parts availability
- No unscheduled stops due to missing parts
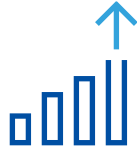
Increase Performance

- Maximize Overall Equipment Effectiveness (OEE)
- Ensure optimum performance

Ensure Full Compliance

- Meet all regulatory requirements by using the right spare parts
- Avoid unsuitable 3rd party components that might not meet your specification requirements

Protect Your Customer's Investment

- Profit from price advantages compared to ordering individual parts
- Lower life cycle costs by using high quality spare parts
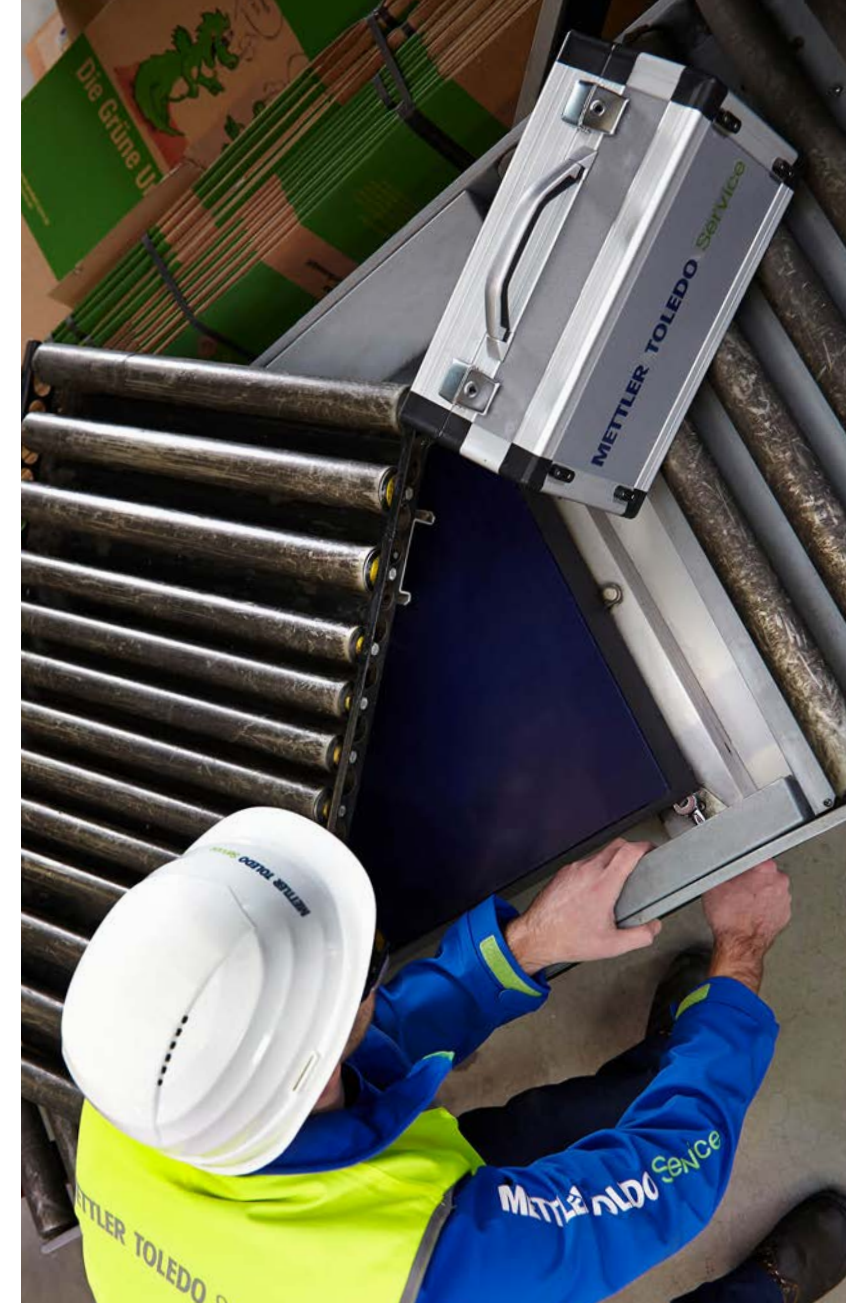
Training

Lifecycle Services for Your Customer

The table below provides an overview of services that can be performed by System Integrators, and which must be performed by METTLER TOLEDO technicians. We will work with you to define the right Service Level Agreement to make sure that together, we support your customers' uptime.

▸ **www.mt.com/tl-service**

	Dimensioning	Basic dynamic weighing	Advanced dynamic weighing	Static weighing
Installation	●	●	●	●
Configuration	●	●	●	●
Comissioning	●	●	●	●
Preventive Maintenance	●	●	●	●
First Level Support	●	●	●	●
Minor Onsite Repair	●	●	●	●
Calibration / Legal Verification	●	●	●	●
Hotline Support	●	●	●	●
Major Onsite Repair		●	●	●
Depot Repair	●			
Training	●	●	●	●

● Performed by METTLER TOLEDO
● Training may be provided to System Integrators
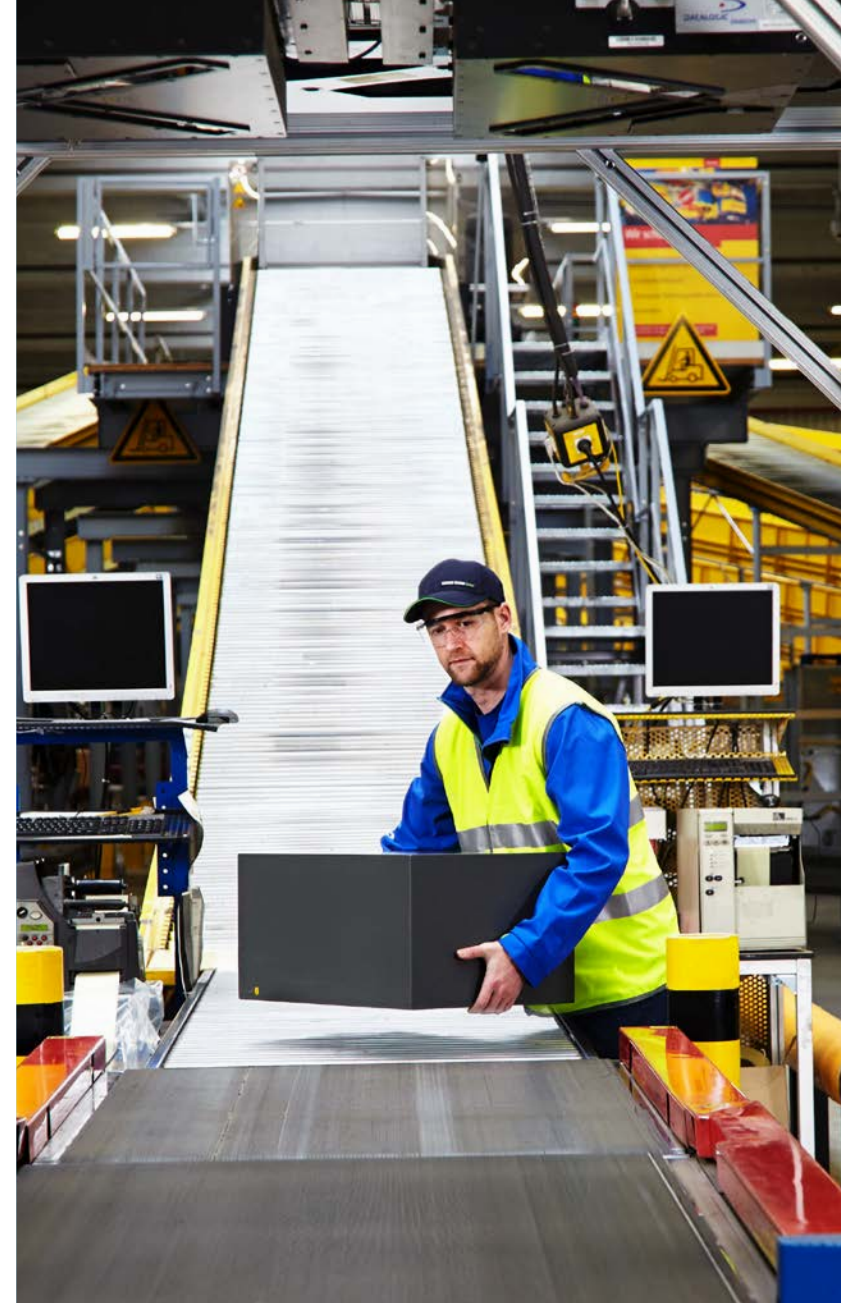
Product Overview

TLW160 Roller Conveyor Scale

- Compact, static weighing for stop-and-go applications
- Robust scale design
- Non-motorized and motorized weighing for streamlined processing

TLW360 Dynamic Scale

- Accurate weighing at high speeds for small and large parcel applications
- Easy to integrate
- Advanced industrial communication interfaces

TLW450 Dynamic Scale

- Efficient project planning and implementation
- Top measuring results in tough conditions
- Fast, efficient sorting and data transfer
- Cost-effective integration

XS100 DualScale

- Cost-effective integration
- Top measuring results in toughest conditions
- Highest throughput
- Minimize downtime and cost

TLD950 Dimensioner

TLD950 MultiHead

- Highest read rates
- Reduce mis-sorts
- Reduced complexity
- Maximum uptime

BBA231 Bench Scale Series

- Highly visible display
- Versatile usage
- Robust construction
- Definable function keys

ICS Bench Scale Series

- ColorWeight speeds up production
- Mobile operation for flexible processes
- Formulation software speeds up workflow
- Modular design

IND360dynamic Weighing Indicator

- Designed for in-motion and static weighing systems
- Advanced filtering capabilities
- User-friendly web interface

IND570 Weighing Indicator

- Fully adaptable
- Flexible control options
- Efficient, secure access to data
- Wide variety of applications

Load Cells, Weigh Modules and Indicators

- Tailored for machine integration
- The right capacity for your application
- Certified equipment
- Flexible mounting and weighing

Pallet Weighing and Dimensioning

- Rugged and robust
- Low cost of ownership
- Seamless communication
- Designed for safety

TLW160 Roller Conveyor Scale

Throughputs up to 1,000 Parcels/Hour
Stop-and-Go Parcel Weighing

Reliable Weighing Results
The combination of proven weighing technology and robust scale design ensures reliable weighing accuracy in tough transport and logistics conditions.

Boost Performance
Productivity and uptime are increased significantly with the ultra-fast processing ability of the embedded indicator.

For more info, visit: ▶ www.mt.com/TLW160

Automated or Static Parcel Handling
Effortless and fast parcel handling is enabled by the motorized roller conveyor, which can be conveniently automated via pushbutton or trigger signal.

Alternatively, a passive roller conveyor option streamlines the process and reduces manual labor costs.

Weighing Regulation Compliance
The scale is certified with international W&M approval, enabling streamlined procurement, faster implementation, and efficient cross-border startup.

Seamless Integration
Delivered fully assembled with rollers, frame, scale, and indicator for simplified on-site installation. Easy integration is ensured thanks to its adjustable feet and flexible indicator mount and a uniform mechanical design.

Key Benefits
- Compact static weighing for stop-and-go applications
- Robust scale design
- Non-motorized and motorized weighing for streamlined processing

TLW160 Technical Information

All METTLER TOLEDO dynamic scales can be configured and turned into tailored solutions.
The specifications listed here are the standard from which a configuration can be built.

Technical Specifications

Product model	TLW160	
Max capacity	30 kg	60 kg
Accuracy (e)	± 10g	± 20g
Standard conveyor size (L x W, mm)*	675 x 900, 825 x 600, 825 x 900, 1050 x 600, 1200 x 900	
Standard conveyor height (H, mm)*	600 ~ 900	
Roller size	Roller diameter: 50mm; Distance between roller center: 75mm	
Conveyor type	Motorized / Non-motorized	
Max speed	60 m/min (Motorized version only)	
Interface	Default: TCP/IP, Optional: Ethernet/IP, Profinet, Profibus DP, Modbus RTU	
Voltage	AC 230V, 50 Hz	
Power consumption	~ 0.1 kW	
Working temperature	0°C~40°C	
Working relative humidity	0~90% No condensation (indoor)	
Certificate	OIML, CE, UKCA	

*Other sizes available on request.

Standard Scale Size

	L / mm	W / mm	Roller quantity	H / mm
TLW160 30/60-675 x 900	675	900	9	600 ~ 900
TLW160 30/60-825 x 600	825	600	11	
TLW160 30/60-825 x 900	825	900	11	
TLW160 30/60-1050 x 600	1050	600	14	
TLW160 30/60-1200 x 900	1200	900	16	
Customized model	On agreement		
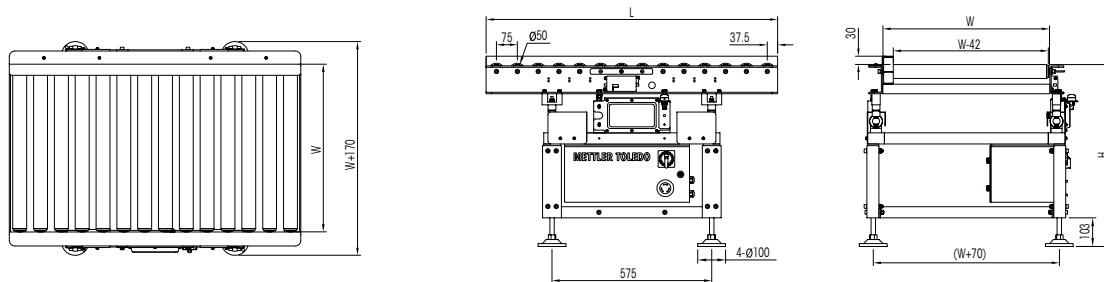
For more info, visit: ▶ www.mt.com/TLW160

TLW160 Configuration Options

Configuration Options

In addition to the standard modules, the following optional modules can be chosen to enhance the scale's performance:

Transport Line Integration
Flexible indicator mounting options, adjustable heights and passive or motorized conveyor options.

Roller-Scale Control
Control the roller scale with a pushbutton, foot pedal or external signal.

Remote Access
Standard offering through TCP/IP communication. Use web server for easy remote configuration, backups and upgrades

ETO Interface Options
Standard configuration with TCP/IP. Several other options including Ethernet/IP, Profinet, ProfibusDP and Modbus RTU.

For more info, visit: ▶ **www.mt.com/TLW160**

Integration

The TLW160 does not facilitate data merging. However, this can be done either by OCTO DataCapture software hosted inside METTLER TOLEDO dimensioners or via an independent PC.

Dimensioning
TLD850 static parcel dimensioner
Static dimensioning of cuboidal and known irregular-shaped parcels

TLD250 static parcel dimensioner
Static dimensioning of cuboidal-shaped parcels

Barcode reading
Compatible with any standard laser or camera-based barcode readers.

Indicator
IND360

Accessory Options

- **Adjuster Height TLW160 900-1000mm**
  TLW160 height adjuster to achieve height of 900-1000mm. One 30799118 contains four adjusters for each leg of one TLW160

- **Foot Switch YBLT-3 CHNT TLW160**
  Foot switch for TLW160 motorized version. Control the roller stop-and-go by stepping on the foot switch

- **Extension Column for TLD250**
  For Integrating TLW160 with TLD250. This column lift the TLD250 measuring plane to TLW160 roller top

TLW360 Dynamic Scale

Throughputs up to 6,000 Parcels/Hour
Basic Dynamic Weighing for Large and Small Parcels

Condition monitoring
The intuitive Smart5™ alert system indicates the condition of the system via indicator display, PLC, web interface and output signal.

Web interface
Access the scale remotely for fast and easy setup or analysis and responsive problem-solving.

Advanced connectivity
The IND360 indicator ensures high speed, low latency data communication for all common PLC interfaces, like Profinet, Ethernet IP, EtherCAT, etc. A one-stop-shop integration package includes all drivers and sample codes.

Designed for service
Increase uptime and reduce maintenance costs due to fast belt and roller exchange and long bearing lives.

Energy efficient
Leverage different motors for different speed ranges with up to 94% efficiency and low power consumption.

High accuracy weighing results in harsh conditions
Advanced filter technology and a robust design reduces environmental disturbances in rough conditions, like on a mezzanine.

For more info, visit: ▶ **www.mt.com/TLW360**

TLW360 Technical Information

All METTLER TOLEDO dynamic scales can be configured and turned into tailored solutions.

The specifications listed here are the standard from which a configuration can be built.

Specifications	TLW360 SP (Small Parcel)	TLW360 LP (Large Parcel)
Weighing Range*	Up to 40 kg	Up to 80 kg
Approved Accuracy**	From ± 5 g	From ± 20 g
Throughput**	Max. 6,000 pcs/h	Max. 4,800 pcs/h
Max. Conveyor Speed	120 m/min	90 m/min
Distance Between Roller Centres (A/A)	500, 600, 800, 900, 1000 mm	800, 1000, 1200, 1500, 1700, 2000, 2500 mm
Conveyor Width (B-B)	300, 400, 500, 600 mm	500, 600, 700, 800, 900, 950, 1000, 1100 mm
Roller Diameter	47 mm	80 mm
Maximum Parcel Width	550 mm	1000 mm
HMI	IND360	
Line Heights (TH)	300-1800 mm (+-50mm)	
Electrical (with lockable mains disconnect)	110 / 230 VAC, single-phase, 50/60 Hz, N, PE,≥ 1200 VA	
Standard Surface Finish	1.4301 (EU) stainless steel	
Zero Reset	Automatic or manual	

*Dependent on object weight and the design and dimensions of the weighing conveyor being used.

**Within official margins of error, depending on the weight, dimensions and transport characteristics of the object being weighed.

TLW360 SP (Small Parcel)
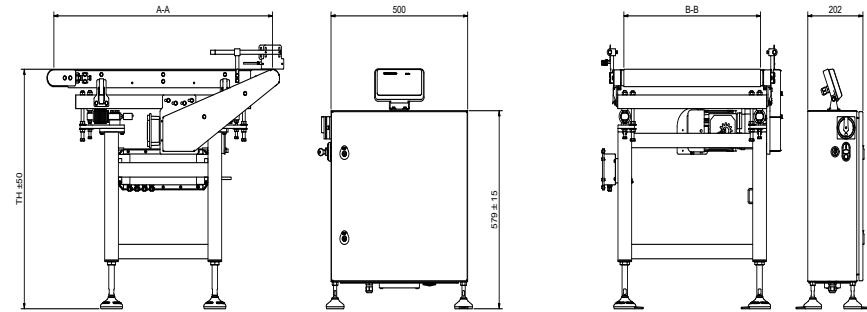
TLW360 LP (Large Parcel
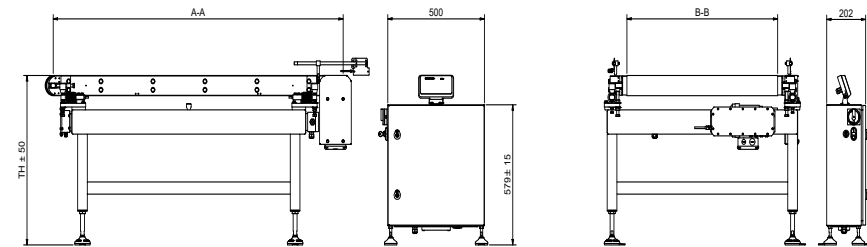
For more info, visit: ▶ www.mt.com/TLW360

TLW360 Configuration Options

Configuration Options

In addition to the standard modules, the following optional modules can be chosen to enhance the scale's performance:

Electronics and sensors
External conveyor controllers, signaling devices, breaks, encoders, frequency inverters, PLC standards and potential free contacts can all be added to the system.

Alibi storage
Tamper-proof, legal-for-trade storage of data.

Safety enhancements
Additional emergency stop buttons, input contacts, special voltages and control panels further enhance system safety.

Jam detection
Detects blockage of the input when items are jammed between the input and weighing conveyor.

Infeed and outfeed conveyors
Supports stable, seamless transfer to and from the weighing belt.

Integration

The TLW360 does not facilitate data merging. However, this can be done either by OCTO DataCapture Software hosted inside METTLER TOLEDO dimensioners or via an independent PC.

Dimensioning
TLD950 SingleHead Dimensioner (see page 40)
In-motion dimensioning of cuboidal shaped parcels

TLD950 MultiHead Dimensioner (see page 44)
In-motion dimensioning of irregularly shaped parcels

Barcode reading
Compatible with any standard laser or camera-based barcode readers.

Indicator
IND360

For more info, visit: ▶ www.mt.com/TLW360

TLW360 Spare Parts

Keeping spare part kits on hand minimizes repair time to maximize equipment uptime. Choose the right kit for your customer's uptime requirements.

Basic Kit

- Weighing Conveyor Belt
- Weighing Conveyor Tooth Belt
- Motor Pulley & Roller Pulley
- Balanced Drive Roller
- Balanced Idle Roller
- Fuses

Uptime Kit

- Weighing Conveyor Belt
- Weighing Conveyor Tooth Belt
- Motor Pulley & Roller Pulley
- Balanced Drive Roller
- Balanced Idle Roller
- Fuses
- Weighing Conveyor Motor

Electronics Kit

- Weighing Conveyor Motor
- Frequency Converter
- Fuses

Complete Kit

- Parts from the Uptime and Electronics Kits

For more info, visit: ▶ www.mt.com/tl-spareparts

TLW450 Dynamic Scale

Throughputs up to 11,000 Parcels an Hour
High-Accuracy Dynamic Weighing

TLW450 High-Speed Dynamic Scale
Equipped with a stiffer frame for speeds beyond 2 m/s which ensures a better accuracy at high speeds for rough environments

Efficient project planning and implementation
Systems are designed according to your unique specifications using a configurator that creates a drawing and specification. Quick, easy access to this information facilitates project planning. An HMI with 32 standard languages supports cross-border implementation.

Fast, efficient sorting and data transfer
Approved to measure at 3 m/s, the TLW450 is one of the fastest scales on the market. Fastest real-time controller ensures high-speed data communication with the sorter. Data drop can be configured based on sorting requirements.

Top measuring results in tough conditions
Advanced filter technology and rugged system design minimize disturbances that affect accuracy in tough conditions, like on a mezzanine.

Cost-effective integration
A wide variety of design configurations, interfaces, protocols and features means little restructuring, re-engineering or changes to IT infrastructure are required.

For more info, visit: ▶ www.mt.com/TLW450

ISO 9001 registered   ISO 14001 registered   OIML   N   NTEP

TLW450 Technical Information

All METTLER TOLEDO dynamic scales can be configured and turned into customer standards. The specifications listed here are the standard from which a configuration can be built.

Technical Specifications	TLW450 (60)	TLW450 (80)
Roller diameter	60 mm	80 mm
Weighing range	10 g – 40 kg	10 g – 80 kg
Approved resolution	1 g	5 g
Accuracy	± 5 g	± 20 g
Speed	90 m/min	180 m/min
Throughput	Max. 7,500 pcs/h	Max. 11,000 pcs/h
Possible line heights	280 mm – 1800 mm	
Operating temperature	0 °C - 40 °C	
Roller centres, weighing conveyor (A-A)	600, 800, 1000 mm	1000, 1200, 1500, 1700 mm
Belt width, weighing conveyor (B-B)	300, 400, 500 mm	500, 600, 800, 900, 1000, 1100 mm
Voltage	230 V (AC), single-phase, 50/60 Hz, N, PE, ≥ 750 VA	
Standard protocols	Mettler-Multi Range, Weight 8C	
Interfacing	Ethernet , Serial	
Certifications	MID, NTEP, NMI	
Load cells	EMFR or DMS	
IP rating for electrical components	IP54	
Frame construction	Assembly of horizontal and vertical tubes, cross members and angle structure.	
Weighing indicator	HMI 7" Cargo, 800 x 400 mm, flexible positioning, RS232 interface.	
Graphical interface	Weight display, current parcel, minimum and maximum parcel classification.	
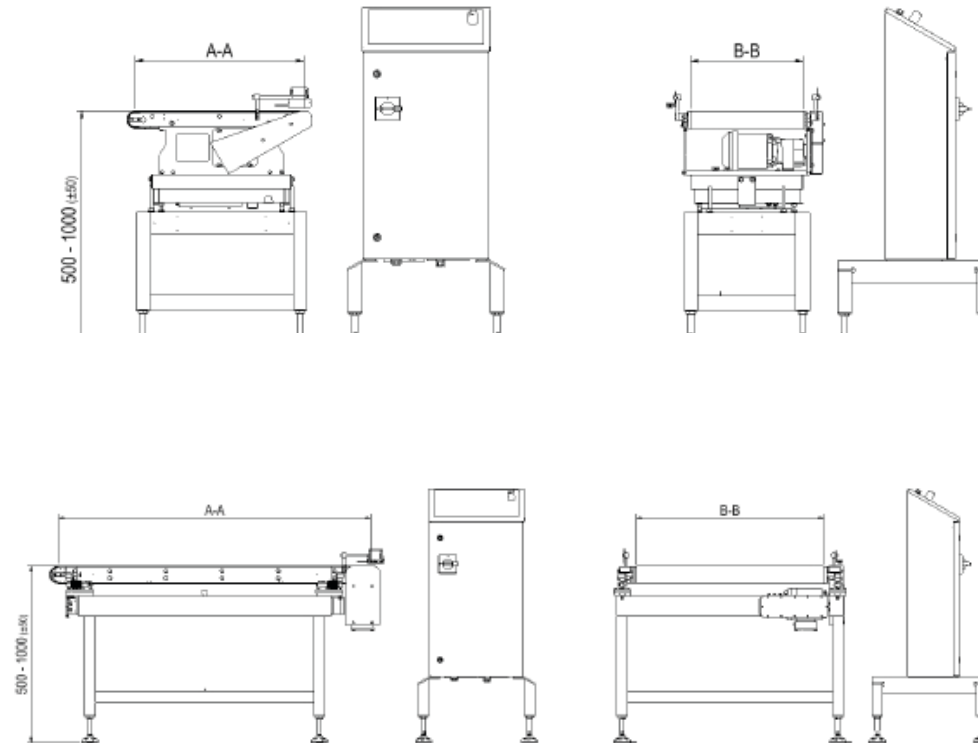
For more info, visit: ▶ www.mt.com/TLW450

TLW450 Configuration Options

Configuration Options

In addition to the standard modules, the following optional modules can be chosen to enhance the scales performance:

Electronics and sensors
Pressure monitoring devices, external conveyor controllers, signalling devices, breaks, encoders,frequency inverters and potential free contacts can all be added to the system.

Alibi storage
Tamper-proof, legal-for-trade storage of data.

Safety ehnancements
Additional emergency stop buttons, input contacts, special voltages and control panels further enhance system safety.

Jam detection
Detects blockage of the input when items are jammed between the input and weighing conveyor.

Infeed and outfeed conveyors
Supports stable, seamless transfer to and from the weighing belt.

For more info, visit: ▶ **www.mt.com/TLW450**

Integration

Dimensioners and barcode readers are connected to the controller (XRTC) of the scale. Data is sent to the controller, which assigns the data to the corresponding item.

Dimensioning
TLD950 SingleHead Dimensioner (see page 40)
In-motion dimensioning of cuboidal shaped parcels

TLD950 MultiHead Dimensioner (see page 44)
In-motion dimensioning of irregularly shaped parcels

Barcode reading
Compatible with any standard laser or camera-based barcode readers.

Indicator
XE Cargo

Protocol	Description	Example
Mettler Multi Range	Fixed length protocol with 4 data fields. There is a change of format when an invalid weight is detected.	4.567 lb ☐ S~~~~~~~4.567~lb~
Weight 8C	Simple interface protocol with fixed length of 8 digits	4.567 lb ☐ 00004567
Weight Data XML	Customizable XML messages with different data fields and no fixed number of digits.	<Date>2015-02-10</Date> <Time>10:02:49</Time> <ID>abcDEFghi</ID> <Weight>12.50 kg</Weight> <Volume> abcDEFghi </Volume> <MaschineId>c</MachineId>

TLW450 Spare Parts

Keeping spare part kits on hand minimizes repair time to maximize equipment uptime. Choose the right kit for your customer's uptime requirements.

Basic Kit

- Weighing Conveyor Belt
- Weighing Conveyor Tooth Belt
- Motor Pulley & Roller Pulley
- Balanced Drive Roller
- Balanced Idle Roller
- Fuses

Uptime Kit

- Weighing Conveyor Belt
- Weighing Conveyor Tooth Belt
- Motor Pulley & Roller Pulley
- Balanced Drive Roller
- Balanced Idle Roller
- Fuses
- Weighing Conveyor Motor

Electronics Kit

- Weighing Conveyor Motor
- Real-Time Controller
- Frequency Converter
- Fuses

Complete Kit

- Parts from the Uptime and Electronics Kits

For more info, visit: ▶ www.mt.com/tl-spareparts

XS100 DualScale

Throughputs up to 18,000 Parcels an Hour
Top Speeds, Top Performance

Top measuring results in toughest conditions
Advanced filter technology and rugged system design minimize disturbances that affect weighing accuracy in tough conditions, such as on a mezzanine.

Highest throughput
Approved to measure at speeds up to 4 m/s (MID), 3 m/s (NTEP), the XS100 is one of the fastest approved scales on the market today. Two weighing belts optimize throughput without increasing system footprint.

Cost-effective integration
A wide variety of design configurations, interfaces, protocols and features means little restructuring, re-engineering or changes to IT infrastructure are required when integrating.

Minimize downtime and cost
The exceptionally stiff weighing conveyor and belt-guidance feature of our dual scale result in little wear and tear to the belt. There is no need to frequently change it, reducing downtime and saving time and money.

For more info, visit: ▶ www.mt.com/XS-DualScale

XS100 DualScale Technical Information

All METTLER TOLEDO dynamic scales can be configured and turned into customer standards. The specifications listed here are the standard from which a configuration can be built.

Technical Specifications	XS100 DualScale
Roller diameter	86 mm
Weighing range	250 g - 60 kg
Approved resolution	e = 50g
Accuracy for single weighing	250 g – 25 kg: ± 50 g 25 kg – 60 kg: ± 75 g
Accuracy for dual weighing	500 g – 50 kg: ± 100 g 50 kg – 60 kg: ± 150 g
Speed	Up to 240 m/min
Throughput	Max. 18,000 pcs/h*
Possible line heights	550 mm - 1000 mm
Operating temperature	0 °C - 40 °C
Roller centers, weighing conveyor (A-A)	Scale 1: 500 mm, 600 mm, 700 mm Scale 2: 1000 mm, 1100 mm, 1200 mm
Belt width, weighing conveyor (B-B)	900 mm, 1000 mm
Voltage	≥ 1200 VA
Standard protocols	Mettler-Multi Range, Weight 8C
Interfacing	Ethernet, Serial
Certifications	MID, NTEP, CE
Load cells	EMFR weigh bridge, strain gauge load cell
IP rating for electrical components	IP54
Weighing indicator	15" HMI with Cargo Software
Graphical interface	HMI 15", 1024 x 768

For more info, visit: ▶ **www.mt.com/XS-DualScale**

XS100 DualScale Configuration Options

Configuration Options

In addition to the standard modules, the following optional modules can be chosen to enhance the scales performance:

Electronics and sensors
External conveyor controllers, signalling devices, breaks, encoders,frequency inverters and potential free contacts can all be added to the system.

Alibi storage
Tamper-proof, legal-for-trade storage of data.

Safety ehnancements
Additional emergency stop buttons, input contacts, special voltages and control panels further enhance system safety.

Jam detection
Detects blockage of the input when items are jammed between the input and weighing conveyor.

Integration

Dimensioners and barcode readers are connected to the controller (XRTC) of the scale. Data is sent to the controller, which assigns the data to the corresponding item.

Dimensioning
TLD950 SingleHead Dimensioner (see page 40)
In-motion dimensioning of cuboidal shaped parcels

TLD950 MultiHead Dimensioner (see page 44)
In-motion dimensioning of irregularly shaped parcels

Barcode reading
Compatible with any standard laser or camera-based barcode readers.

Indicator
X-Series

Protocol	Description	Example
Mettler Multi Range	Fixed length protocol with 4 data fields. There is a change of format when an invalid weight is detected.	4.567 lb ▯ S~~~~~~~4.567~lb~
Weight 8C	Simple interface protocol with fixed length of 8 digits	4.567 lb ▯ 00004567
BCS	Includes weight data, connection guarding and infromation for faulty parcels.	19.99 kg ~~19.99kg~ No weight value ERR105
Weight Data XML	Customizable XML messages with different data fields and no fixed number of digits.	<Date>2015-02-10</Date> <Time>10:02:49</Time> <ID>abcDEFghi</ID> <Weight>12.50 kg</Weight> <Volume> abcDEFghi </Volume> <MaschineId>1243568790</MachineId>

XS100 DualScale Spare Parts

Keeping spare part kits on hand minimizes repair time to maximize equipement uptime. Choose the right kit for your customer's uptime requirements.

Basic Kit

- Weighing Conveyor Belt
- Weighing Conveyor Tooth Belt
- Motor Pulley & Roller Pulley
- Balanced Drive Roller
- Balanced Idle Roller
- Fuses

Uptime Kit

- Weighing Conveyor Belt
- Weighing Conveyor Tooth Belt
- Motor Pulley & Roller Pulley
- Balanced Drive Roller
- Balanced Idle Roller
- Fuses
- Weighing Conveyor Motor

Electronics Kit

- Weighing Conveyor Motor
- Real-Time Controller
- Frequency Converter
- Fuses

Complete Kit

- Parts from the Uptime and Electronics Kits

For more info, visit: ▶ www.mt.com/tl-spareparts

TLD950 Dimensioner Family

Dynamic Dimensioning of Cuboidals and Irregulars
Accurately Measures All Surfaces

Highest read rates
The largest optics and highly precise lasers provide the industry's highest read rates. A two-milimeter height accuracy approval allows for legal-for-trade measurement of flat parcels meaning you can recover revenue on a wider range of objects.

Reduced complexity
A powerful, embedded computer eliminates the need for an external PC. This reduces the number of parts and cables required, lowering the risk of failure.

Reduce mis-sorts
High read rates mean fewer rejects. Optimize sorter efficiency with a dimensioner that measures every parcel—even those with black, blue or reflective wrapping—with ease

Maximum uptime
TLD950 dimensioners are designed for quick and easy replacement. If a dimensioner breaks down, it is back up and running quickly again. The system configuration is easily restored.

For more info, visit: ▶ www.mt.com/TLD950

TLD950 SingleHead Technical Information

The TLD950SH dimensioner is a standard, plug-and-play product that is mounted over a conveyor system for dimensioning parcels in motion.

Technical Specifications	TLD950SH
Speed	0 - 3.3 m/s
Min. size (L x W x H)	50 x 50 x 20 mm
Max. size (L x W x H)	4000 x 900 x 900 mm
Certified resolution (d)	d=2 mm height, d=5 mm length & width
Accuracy (L x W x H)	5 x 5 x 2 mm
Conveyor type	Flat, cross-belt
Object types	Rectangular shapes
Flow Modes	Singulated flow Singulated flow touching* Non-singulated flow touching and non-touching*
Speed	Variable speed, measures down to 0 m/s
Display	CS2200, OctoCSM (VGA) AMS viewer
Sealing	Electronic sealing
Light source	Laser diode, red, wavelength 660 nm
Laser	Class II (2)
Housing material	Aluminium
Operating temperature	10 to +50°C, start condition 0°C
Humidity	Up to 100%, non-condensing
Aperture angle	82°
Power	24 VDC ±15%
Power consumption	40 W
Fuse	TO/FKS 4A

* Conditions apply

For more info, visit: ▶ **www.mt.com/TLD950**

TLD950 SingleHead Configuration Options

Configuration Options

The TLD950SH dimensioner is a plug-and-play product. The following features can be deployed to enhance the dimensioner functionality.

Side-by-side detection
Parcels travelling side-by-side can cause problems for sorters. The dimensioner can detect these and send a signal to the sorter to redirect.

Touching-item detection
Touching items can result in incorrect data and sorting. The dimensioner knows when multiple items are touching and can send a signal to the sorter to redirect.

Parcel positioning
Knowing exactly where a parcel is on the belt can aid sorter communication for correct sorting and tracking.

Forward and reverse measuring
If parcel flow changes during operations, the TLD950SH can carry on measurement.

Scalability
If your customer's requirement changes and there is a need to measure all shapes legal-for-trade, the TLD950SH can easily be upgraded to a TLD950MH for measuring objects of all shapes.

Integration

The TLD950SH has no need for an external PC, the embedded processor manages data captured and communicates seamlessly with the host.
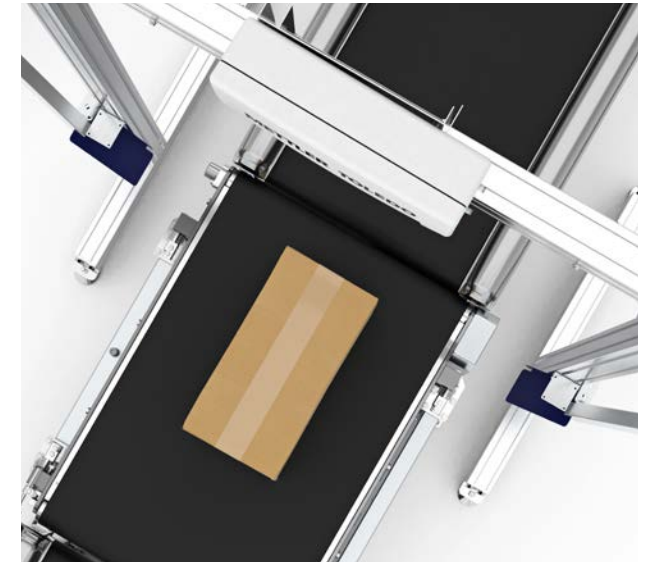
The TLD950SH connects to other devices directly and may serve as the host communication gateway.

Weighing
Compatible with dynamic scales running at speeds up to 3.3 m/s.

Barcode reading
Compatible with any standard laser or camera-based barcode readers.

For more info, visit: ▶ **www.mt.com/TLD950**

TLD950 SingleHead Spare Parts and Repair

Few spare parts are required for METTLER TOLEDO dynamic dimensioners as, due to Weights and Measures regulations, they cannot be repaired in the field. We recommend that you keep a spare dimensioner on site to minimize downtime in case of breakdown and a basic kit of required accessories. These spare parts are available from regional METTLER TOLEDO hubs and will be delivered to site within 24 hours.

Basic Kit

- Pulse Encoder
- Pulse Encoder Wheel
- Cable Pulse Encoder
- Power Supply
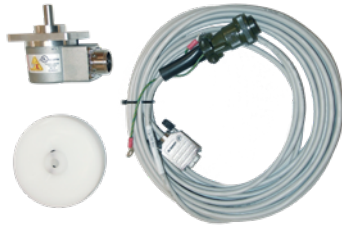
Uptime Kit

- TLD950SH Dimensioner
- Pulse Encoder
- Pulse Encoder Wheel
- Fuses
- Cable Pulse Encoder
- Power Supply

Dimensioner Depot Repair

Due to to the sensitivity of the electronics embedded in our dimensioning devices, they must not be opened in the field. If repair is necessary, units should be sent for repair to a METTLER TOLEDO depot repair center. Typical turn-around time is 10 days.

Quick, Easy Replacement

METTLER TOLEDO dimesnioners are mounted on a quick-mount bracket for easy replacement. Back up the system settings using a USB stick and your dimensioner can be ready to measure again in around 20 minutes.

For more info, visit: ▶ www.mt.com/tl-spareparts

TLD950 MultiHead

Dynamic Dimensioning of Irregular Shapes
Read Rates up to 99.9%

Highest read rates
Largest optics highly precise lasers provide the industry's highest read rates. A 2-milimeter height accuracy approval allows for legal-for-trade measurement of flat parcels meaning you can recover revenue on a wider range of objects.

Reduced complexity
A powerful, embedded computer eliminates the need for an external PC. This reduces the number of parts and cables required, lowering the risk of failure.

Reduce mis-sorts
High read rates mean fewer rejects. Optimize sorter efficiency with a dimensioner that measures every parcel, even those with black, blue or reflective wrapping, with ease.

Maximum uptime
TLD950MH dimensioners are designed for quick and easy installation and replacement. If a dimensioner breaks down, it is back up and running quickly again.

For more info, visit: ▶ www.mt.com/TLD950

TLD950 MultiHead Technical Information

The TLD950MH dimensioner is a standard, plug-and-play product that is mounted over a conveyor system for dimensioning parcels in motion.

Technical Specifications	TLD950MH
Speed	0 - 3.3 m/s
Min. size (L x W x H)	50 x 50 x 20 mm
Max. size (L x W x H)	4000 x 1600 x 1200 mm
Certified resolution (d)	d=2 mm height, d=5 mm length & width
Accuracy (L x W x H)	5 x 5 x 2 mm
Conveyor type	Flat, cross-belt
Objects	Rectangular objects and irregular objects of all shapes
Flow Modes	Singulated flow Non-singulated flow non-touching*
Speed	Variable speed, (removed item)
Display	CS2200, OctoCSM (VGA) AMS viewer
Sealing	Electronic sealing
Light source	Laser diode, red, wavelength 660 nm
Laser	Class II (2)
Housing material	Aluminium
Operating temperature	10 to +50°C, start condition 0°C
Humidity	Up to 100%, non-condensing
Aperture angle	82°
Power	24 VDC ±15%
Power consumption	40 W
Fuse	TO/FKS 4A

* Conditions apply

For more info, visit: ▶ **www.mt.com/TLD950**

TLD950 MultiHead Configuration Options

Configuration Options

The TLD950MH dimensioner is a plug-and-play product. The following features can be deployed to enhance the dimensioner functionality.

Side-by-side detection
Parcels travelling side-by-side can cause problems for sorters. The dimensioner can detect these and send a signal to the sorter to redirect.

Touching item detection
Touching items can result in incorrect data and sorting. The dimensioner knows when multiple items are touching and can send a signal to the sorter to redirect.

Parcel positioning
Knowing exactly where a parcel is on the belt can aid sorter communication for correct sorting and tracking.

Forward and reverse measuring
If parcel flow changes during operations, the TLD950MH can carry on measurement.

Integration

The TLD950MH has no need for an external PC, the embedded processor manages data captured and communicates seamlessly with the host.

The TLD950MH connects to other devices directly and may serve as the host communication gateway.

Weighing
Compatible with dynamic scales running at speeds up to 3.3 m/s.

Barcode reading
Compatible with any standard laser or camera-based barcode readers.

For more info, visit: ▶ www.mt.com/TLD950

TLD950 MultiHead Spare Parts and Repair

Keeping spare part kits on hand minimizes repair time to maximize equipment uptime. Choose the right kit for your customer's uptime requirements.

Basic Kit

- Pulse Encoder
- Pulse Encoder Wheel
- Cable Pulse Encoder
- Power Supply
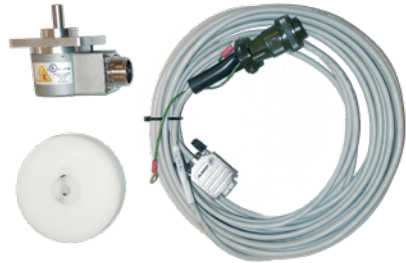
Uptime Kit

- TLD950MH Dimensioner MultiHead Set-up
- Pulse Encoder
- Pulse Encoder Wheel
- Cable Pulse Encoder
- Power Supply

Dimensioner Depot Repair

Due to to the sensitivity of the electronics embedded in our dimensioning devices, they must not be opened in the field. If repair is necessary, units should be sent for repair to a METTLER TOLEDO depot repair center. Typical turn-around time is 10 days.

Quick, Easy Replacement

METTLER TOLEDO dimesnioners are mounted on a quick-mount bracket for easy replacement. Back up the system settings using a USB stick and your dimensioner can be ready to measure again in around 20 minutes.

For more info, visit: ▶ www.mt.com/tl-spareparts

BBA231 Bench Scale Series

Basic Static Weighing
Fast, Versatile, Economical

Highly visible display
For excellent readability under any light condition, the BBA231 scale features a large, 60-milimeter high LCD display with an adjustable white backlight.

Robust construction
The rugged platform construction ensures durability and accurate weighing results. Overload stop protects the load cell from damage.

Versatile usage
The scale includes an RS232 interface which allows communication with a printer or PC. Its plastic enclosure is both stylish and functional.

Definable function keys
In addition to five tactile and responsive standard keys, the scale features two free definable function keys. This allows fast and easy switching between functions and ensures quick set-up and easy use.

ISO 9001 registered ISO 14001 registered OIML IP66 IP68

For more info, visit: ▶ www.mt.com/BBA231

BBA231 Technical Information

The BBA231 bench scale is a standard, plug-and-play product that can be used in dry and dust-contaminated environments.

Display	7-segment LCD Display					
Material	Load plate: AISI304					
Power Supply	85–264 VAC, 6AA Batteries					
Data Interfaces	RS232					
	Maximum Capacity					
Platform / Load Plate Size	**6 kg**	**15 kg**	**35 kg**	**60 kg**	**150 kg**	**300 kg**
A 240 x 300 mm	•	•				
BB 300 x 400 mm			•	•		
B 400 x 500 mm				•	•	
BC 500 x 650 mm				•	•	•
CC 600 x 800 mm				•	•	•
Approvable Readablity	2 g	5 g	10 g	20 g	50 g	100 g
Recommended Readability (min.)	0.5 g	1 g	2 g	5 g	10 g	20 g
Approvable Resolution	OIML Class III, 3,000e					
Recommended Resolution (max.)	15,000d					
More Information	**www.mt.com/BBA231**					

METTLER TOLEDO has a full range of static parcel scales for virtually any application. Discover the full range in our Industrial Weighing Catalog.

Industrial Weighing Catalog
▶ **www.mt.com/ind-catalog**

For more info, visit: ▶ **www.mt.com/BBA231**

ICS Bench Scale Series

Bench and Compact Scales
Flexible Counting and Checkweighing

ColourWeigh speeds up production
Users save time and money with the smart colored display that makes weighing applications faster and less error-prone.

Formulation software speeds up workflow
The application indicates if a target weight is reached and leads the operator intuitively through the recipe. This enhances easy, error-free formulation.

Mobile operation for flexible processes
An optional WLAN interface and long lasting Li-Ion battery pack allows flexible operation anywhere in the facility.

Modular design
The ICS product family consists of a large variety of indicators and platforms to fulfill specific requrements. From simple weighing to integrated solutions.

METTLER TOLEDO
0.918 kg

ISO 9001 registered   ISO 14001 registered   OIML   IP66   IP68

For more info, visit: ▶ www.mt.com/dry-bench-scales

ICS241 and ICS425 Technical Information

The ICS241 is a mobile compact scale for simple applications in logistics and warehousing.

- Basic weighing
- Mobile
- Simple counting

The ICS425 is a bench scale for advanced applications in logistics and warehousing.

- Accurate counting and totalizing
- Advanced checkwieghing and portioning
- Fast average weighing

Display	Graphic LCD display, with white backlight			
Material	Scale: plastic			
Power Supply	6D size batteries or 100–240VAC over adapter			
Data Interfaces	RS232			
	Maximum Capacity			
Platform / Load Plate Size	**3 kg**	**6 kg**	**15 kg**	**30 kg**
228 x 228 mm	•	•	•	•
Approvable Readablity	1 g	2 g	5 g	10 g
Recommended Readability (min.)	0.1 g	0.2 g	0.5 g	1 g
Approvable Resolution	OIML Class III, 3,000e			
Recommended Resolution (max.)	30,000d			
More Information	**www.mt.com/ICS241**			

Model	ICS425
Color TFT Display	
colorWeight®	
Configurable Soft Keys	
Numeric (n) / Alphanumeric (a) Keypad	
Additional Interface Options	1
Attachable Platforms	1
Resolution for Analog Platforms**	300,000d; 7,500e, OIML / 10,000d, NTEP
Display	**ICS4_5:** LCD liquid crystal graphical display with backlighting
Keypad	Tactile-touch membrane keypad (PET), scratch-resistant material
Housing	Die-cast aluminium
Protection	IP65
Power	100–240 VAC; optional battery 12 V / 2.5 A
Standard Interfaces	1 RS232

METTLER TOLEDO has a full range of static parcel scales for virtually any application. Discover the full range in our Industrial Weighing Catalog.

Industrial Weighing Catalog
▸ **www.mt.com/ind-catalog**

IND360dynamic Weighing Indicator

Dynamic and Static Use
For Factory Automation

In-motion Weighing
Designed for in-motion weighing on conveying systems, including belts, rollers, or other purpose-built transportation systems. Ideal for integration into manufacturing machines or manufacturing lines.

Maximize Throughput
Incredibly fast 2-millisecond processing speed combined with in-motion weight filtering delivers outstanding results, increasing your machine's throughput.

Flexible Integration
Trigger automatic weight capture via a single photo eye, dual photo eyes, weight threshold, or your preferred automation interface. Connects to most PLCs in less than five minutes.

Innovative Web Interface
IND360's web-based graphical tool allows you to easily optimize photo-eye trigger points, adjust measuring times, and analyze vibration.

For more info, visit: ▶ www.mt.com/IND360

IND360 Technical Information

IND360dynamic is compatible with a broad range of analog weigh modules and load cells.

	Parameter	Description
Application	Operating modes	In-Motion checkweighing/catchweighing with multi-object processing (supports up to 3 items on the conveyor simultaneously) Static checkweighing/catchweighing
	Weight Trigger	Digital input: front photo eye, rear photo eye, dual photo eye, capture weight signal (static mode) Automation network: virtual photo eye trigger
PLC connectivity	Automation Interfaces	PROFINET, Profibus DP, EtherNet/IP, EtherCAT, CCLink IE Field Basic, Modbus RTU, Modbus TCP
	Certification	PNO (Siemens), ODVA (Rockwell and others), ETG (EtherCAT), CLPA (CC-Link IE Field Basic)
	Data exchange	Cyclic: 480 Hz bidirectional read/write data exchange via process image 16 bytes (SAI 2 block), or 64 bytes (SAI 8 block); Acyclic: dynamic data size

Parameter	Detail	Units of Measurement	DIN	Panel	Harsh
Housing	Enclosure type		DIN-Rail mount, quick connection with automatic grounding	Panel mount with detachable electronics	VESA 100 Desk/wall/column mount
	Ingress protection		IP20, Type 1	IP65 display, IP20 electronics	IP66 and IP69K
	W × H × D	mm / in	40 × 130 × 100 / 1.6 × 5.1 × 3.9	175 × 94 × 16 / 6.9 × 3.7 × 0.6	275 × 85 × 200 / 10.8 × 3.3 × 7.9

METTLER TOLEDO has a full range of static parcel scales for virtually any application. Discover the full range in our Industrial Weighing Catalog.

Industrial Weighing Catalog
▸ **www.mt.com/ind-catalog**

For more info, visit: ▸ **www.mt.com/IND360**

IND570 Weighing Indicator

One Indicator, Many Solutions
Performance and Versatility

Fully Adaptable
The IND570 is easily expanded with software, communication and control interfaces to meet process requirements - adding cost only when needed.

Efficient, Secure Access to Data
Adapt data collection and transfer to meet the unique requirements of each weighing application. PLC, network, USB and standard serial communication interfaces available.

Flexible Control Options
Use operator routines to collect transaction data and guarantee consistency, quality and traceability. In automated systems, allow digital I/O and integrated applications to take control.

Wide Variety of Applications
The IND570 offers a broad offering of functions to manage weighing applications and satisfies increasing demands for accuracy, readability, efficiency and traceability.

For more info, visit: ▶ www.mt.com/IND570

ISO 9001 registered   ISO 14001 registered   OIML   IP66   IP68

IND570 Technical Information

Designed for performance and versatility, the IND570 industrial weighing indicator is the easy choice for even the most challenging logistics weighing applications.

Technical Specifications	IND570
Enclosure	Stainless steel front panel, aluminium chassis. IP65 protection.
Weight	3.2 Kg
Operating environment	-10°C to +40°C, 10% to 95% relative humidity, non-condensing
Input power	DC: 20-29 VDC
Display	High contrast, high resolution OLED display with clear weight indication and low power consump-tion
Status indicators	Gross, Net, active Range/Interval, Units, Motion, Center of Zero, MinWeigh, Service Icon
USB Host	USB Host (standard): Type A connection, +5V at 500mA for connected devices. Supports external keyboards, barcode scanners and USB memory devices.
Serial Connections	Standard: COM1 supports RS-232/422/485. COM4, isolated Optional: COM2 (RS232) and COM3 (RS-232/522/485)
Network Connections	Optional Ethernet interface supports speeds of 10 Mb/s and 100 Mb/s using 10 Base-T, 100 Base-TX, 100 Base-FX, and 100 Base-T4. Fully compliant with IEEE standard 802.3 and 802.3x. Full duplex flow control supported. Supports 3 simultaneous socket connections.
Protocols	MT Continuous Output, MT Continuous Extended, CTPZ input, Demand Print, Continuous Template output, ARM100 Remote I/O, Shared Data Server access, SICS, ASCII input
Fieldbus	EtherNet/IP, Analog Output (4-20 mA or 0-10 VDC), PRO-FIBUS® DP, PROFINET®, ControlNet™, DeviceNet™, Modbus TCP
Discrete I/O	Either 2 inputs and 5 outputs or 5 inputs and 8 outputs available internally-ARM100 Remote I/O modules expand total I/O support to 13 inputs and 20 outputs
Interface update rates	PLC cyclic data: 25 Hz. Int. Discrete I/O: 50 Hz. Ext. Discrete I/O (ARM100): 25 Hz
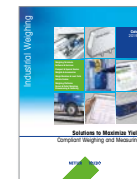
METTLER TOLEDO has a full range of weighing indicators for virtually any application. Discover the full range in our Industrial Weighing Catalog.

Industrial Weighing Catalog
▶ **www.mt.com/ind-catalog**

Load Cells, Weigh Modules and Indicators

Satisfying different needs on an end-customer's site can be a challenge, especially when exporting machines worldwide. Our range of weigh modules, sensors, indicators and software solutions enable you to meet these needs while delivering high quality and equipment effectiveness.

Tailored for machine integration

Machine and instrument manufacturers supplying the chemical, food and pharmaceutical industries need tailored weighing components. Our automated precision weigh modules offer versatile mechanical, electrical and software features for easy integration.

Certified hygienic equipment

Hygienic MultiMount™ weigh modules fulfill hygienic design requirements for minimal contamination risk and easy cleaning. These modules feature SafeLock™ which ensures easy, safe and trouble-free installation
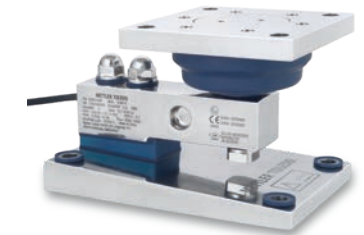
The right capacity for your application

Provide the highest accuracy by closely matching tank scale capacity to load. Our comprehensive range of load cells covers everything from 3 kilograms up to 300 tons without any compromise on safety. Features like SafeLock™ ensure easy and trouble-free installation.
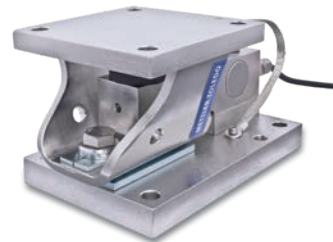
Flexible mounting and weighing

Whether your customer is connecting to one or many analog or POWERCELL® digital scales, it's easy to find a METTLER TOLEDO weighing indicator that fits their production process. We offer models for mounting on a wall, column or panel as well as DIN rail mounting systems.

Design your own solution. Discover our full range of weighing components for builders of instruments, machinery and process plants.

Weighing Components Catalog
▶ **www.mt.com/ind-oem-catalog**

Pallet Weighing and Dimensioning

From floor scales and forklift scales to fully integrated pallet dimensioning, weighing and scanning solutions, we can offer you and your transport and logistics customers equipment to speed up and simplify the handling of larger freight.

Floor Scales

Choose from a wide range of industrial floor scale with capacity ranging from 600 kg to more than 25,000 kg. Designed for accuracy in the most demanding enviornments, these scales offer a reliable, cost effective solution for any logistics operation.
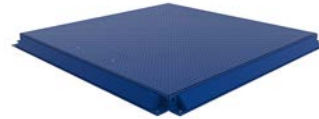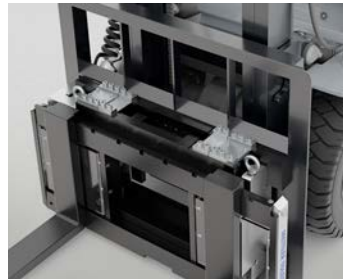
Pallet Dimensioners

Robust pallet dimensioners automatically record the length, width and height of pallets and non-conveyables. Data is legal for trade and can be used for invoicing, costing and load planning.

Forklift Scales

Designed for tough industrial environments, our forklift scales set the standard for reliability, safety and accuracy. On-board weighing speeds up the pallet handling process in freight forwarding, shipping and warehousing.

Pallet Dimensioning, Weighing and Scanning

If your customer requires a complete pallet solution that merges pallet ID, weight and dimensions, we can combine our leading dimensioning and weighing components using smart Data Management Software.

Discover our full range of pallet solutions for the freight and LTL Industry.

Freight Solutions Guide
▸ **www.mt.com/freight-solutions**

Project Management

Benefit from Our Experience

Close cooperation before, during and after investment ensures that equipment meets your project goals. Expect timely installation according to specification, support from experienced project specialists, highly trained technicians and a carefully planned project roll-out.

▶ **www.mt.com**

Project Initiation

- Analysis of project requirements and technical specifications
- Definition of equipment and contract requirements
- Overview of costs and benefits
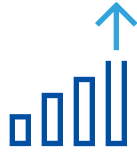
Planning and Design

- Define project team and communication plan
- Define deliverables and timeline
- Schedule activities and plan resources
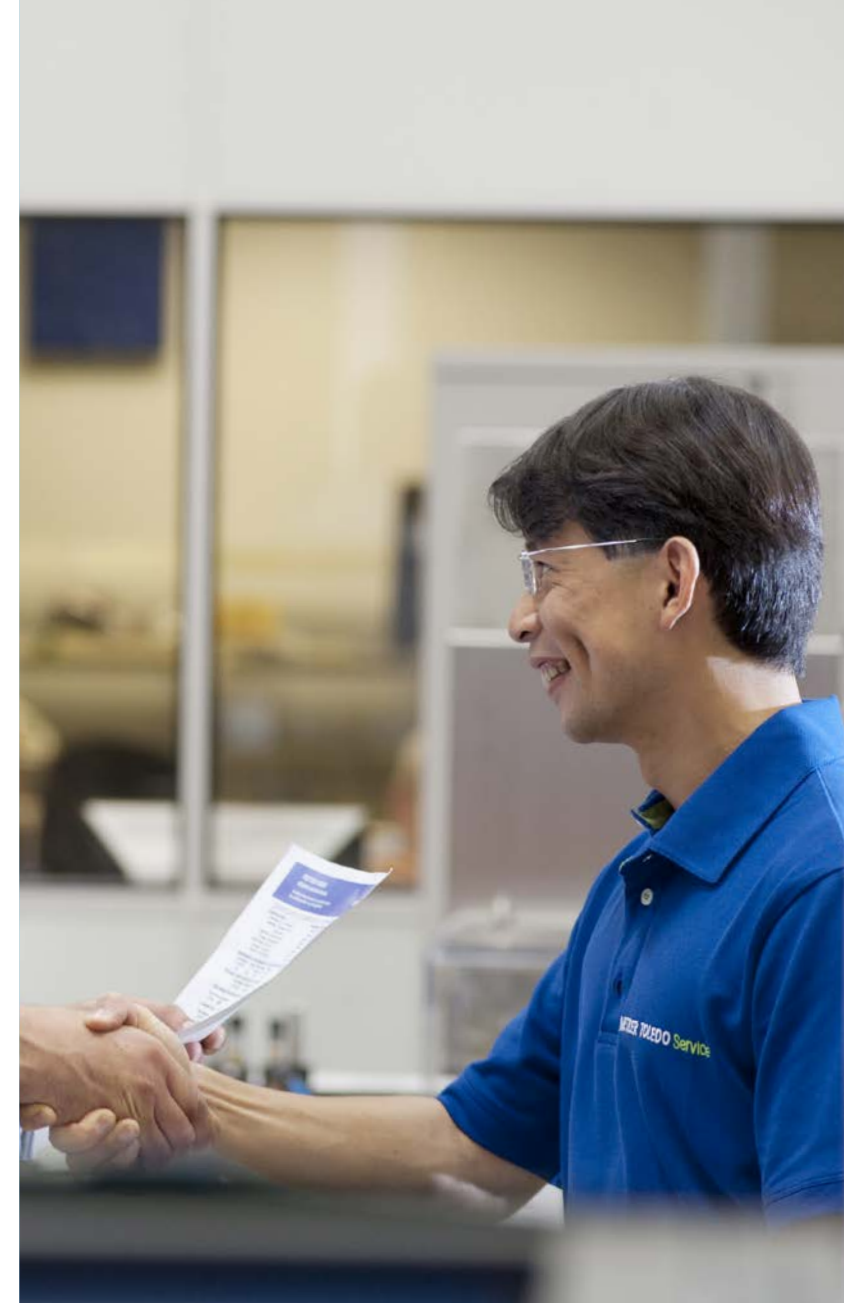- Analyze and communicate risk

Project Roll-Out

- Coordination of people and equipment
- Installation
- Testing and training

Monitoring, Control and Project Close

- Evaluation of project according to cost and expectations
- Implementation of corrective actions where necessary
- Site Acceptance Test

Cross-Border Projects

Global Support for a Global Industry

The transport and logistics industry is more global than any other. System integrators need to work across borders to serve global customers. Standardization is important to achieve consistent results and effective communication accross systems and business units.

▸ **www.mt.com**

Our Offering

- **Standardized equipment**
  Systems are built from a range of standardized options

- **Regional manufacturing**
  Regional production facilities in Europe, Asia and the Americas

- **Multi-language interfaces and documentation**
  32 standard languages

- **Regional competency and training centers**
  Regional support for Europe, Asia and the Americas

- **Regional spare part hubs**
  Parts shipped promptly from our US, China and EU hubs

- **Global service coverage**
  Broadest footprint of service organizations in the industry
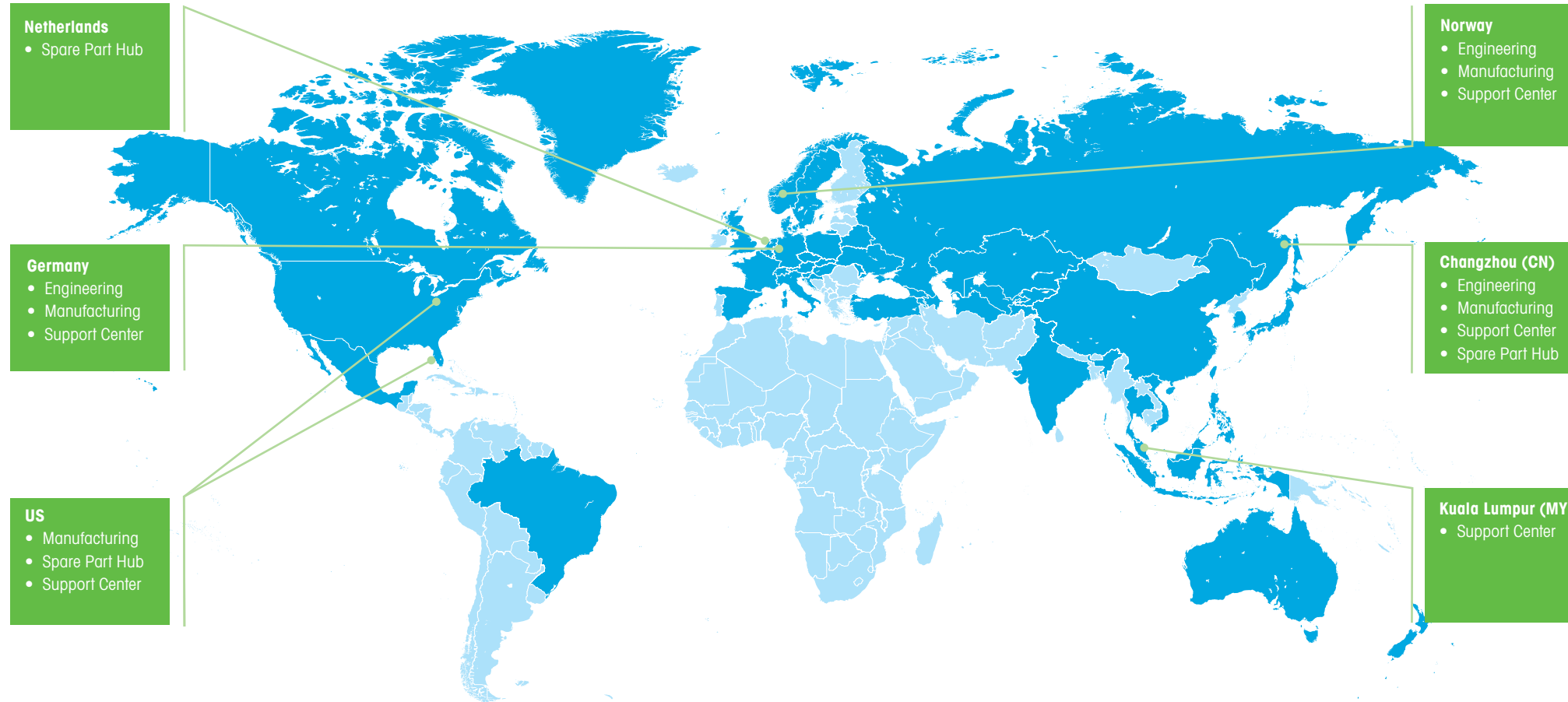
Your Benefits

- **Global, streamlined implementation**
  Create your own custom-built standards for reduced lead-times and seamless integration

- **Quick access**
  Reduce transport costs and customs complications

- **Ease-of-use**
  Simplified training, service and integration

- **Support in all time-zones**
  Trained teams are always close by

- **Maximum customer uptime**
  Maximum end-user uptime and stress-free service

- **Support where you need it**
  Local teams of expert technicians to support installation and system uptime
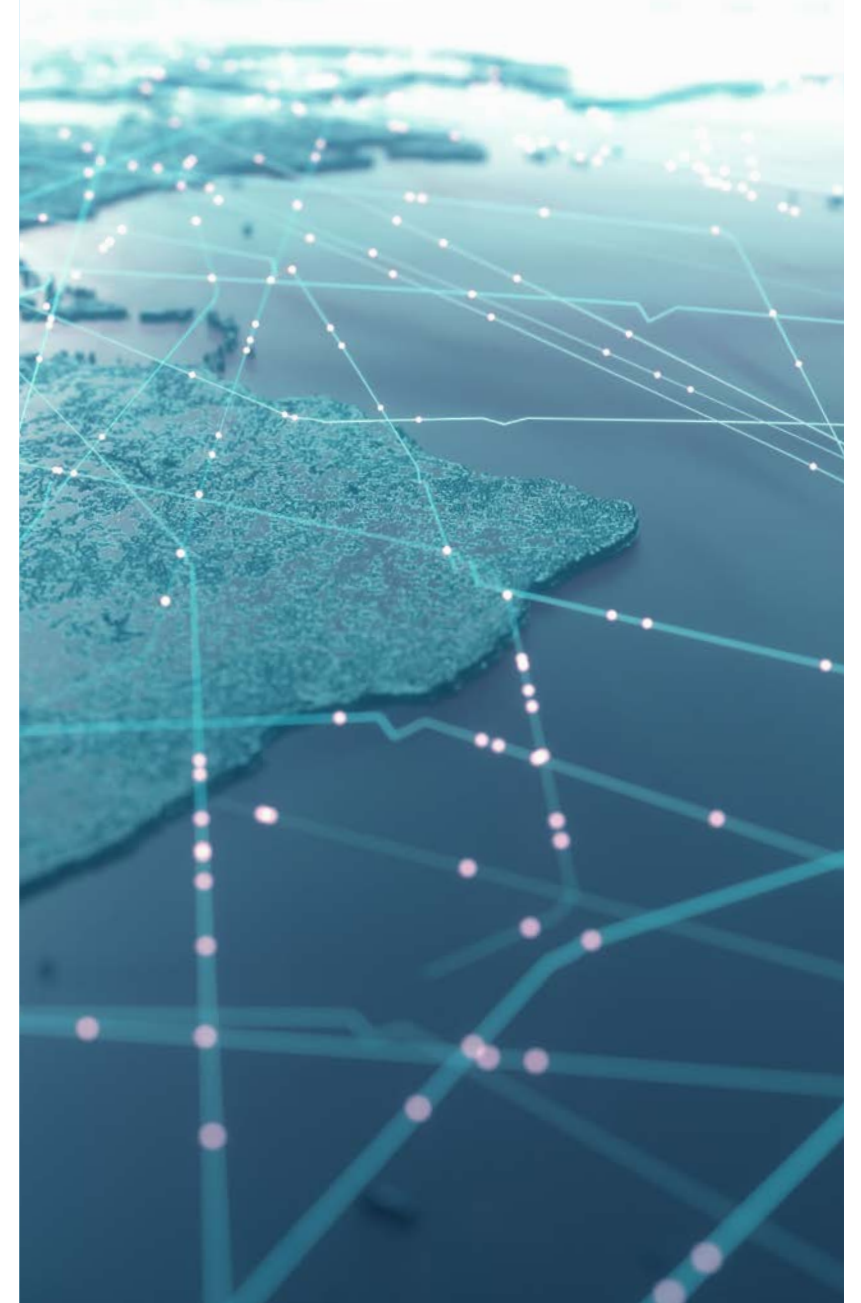
Global Footprint

Local manufacturing is not only environmentally sustainable, it lowers transport costs and lead-times for our customers. METTLER TOLEDO has competency centers and spare-part hubs in Europe, Asia and the Americas. Regional stocking of spare parts supports system uptime. Technicians and business partners receive timely support in their own time-zone and language.

▶ **www.mt.com**

Netherlands
- Spare Part Hub

Germany
- Engineering
- Manufacturing
- Support Center

US
- Manufacturing
- Spare Part Hub
- Support Center

Norway
- Engineering
- Manufacturing
- Support Center

Changzhou (CN)
- Engineering
- Manufacturing
- Support Center
- Spare Part Hub

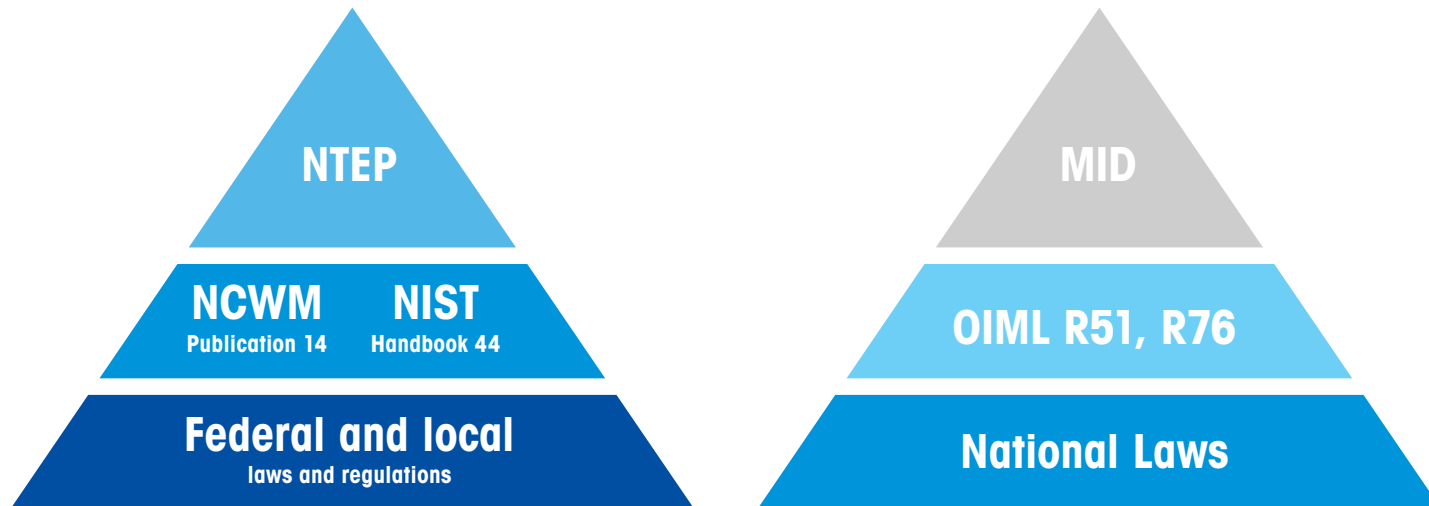**Kuala Lumpur (MY)**
- Support Center

Legal-for-Trade Compliance

Widest Range of Weights and Measures Approvals

At METTLER TOLEDO, we take care that our customers have data they can not only rely on, but that can also be used legal-for-trade. With the widest range of international and national Weights and Measures approvals in the industry and a team of specialists dedicated to legal metrology, we are well-equipped to ensure that the data you use for invoicing is accurate, reliable and legal-for-trade.

▸ **www.mt.com/compliance**

NTEP

NCWM
Publication 14

NIST
Handbook 44

Federal and local
laws and regulations

MID

OIML R51, R76

National Laws

Custom-Built Standards

Easy Ordering, Reduced Lead Time

If you know that you deliver the same system again and again, either as part of a standard handling system you offer or to meet the requirements of a particiluar Key Account, we can configure that system as a custom-built standard. Once we have defined your standard, you will benefit from shorter lead times and the same ease-of-ordering as with standard, off-the-shelf products.

▸ **www.mt.com**

	Standard Products	Custom-Built Standards	Engineered-to-Order
Description	Pre-engineered solutions. Off-the-shelf and configurable from a list of predefined options.	Created based on individual requirements for repeated special requests and made available as standard.	Customized solutions for one-off projects. Defined and engineered outside of standard processes.
Availability	Market-wide	Integrator-specific solutions	One-off specialties.
Lead Time	4-6 weeks*	4-6 weeks*	11-16 weeks*
Your Benefits	Off-the-shelf Easy-ordering Short delivery time	Tailored to your requirements Lower cost Easy-ordering Short delivery time	Bespoke solutions

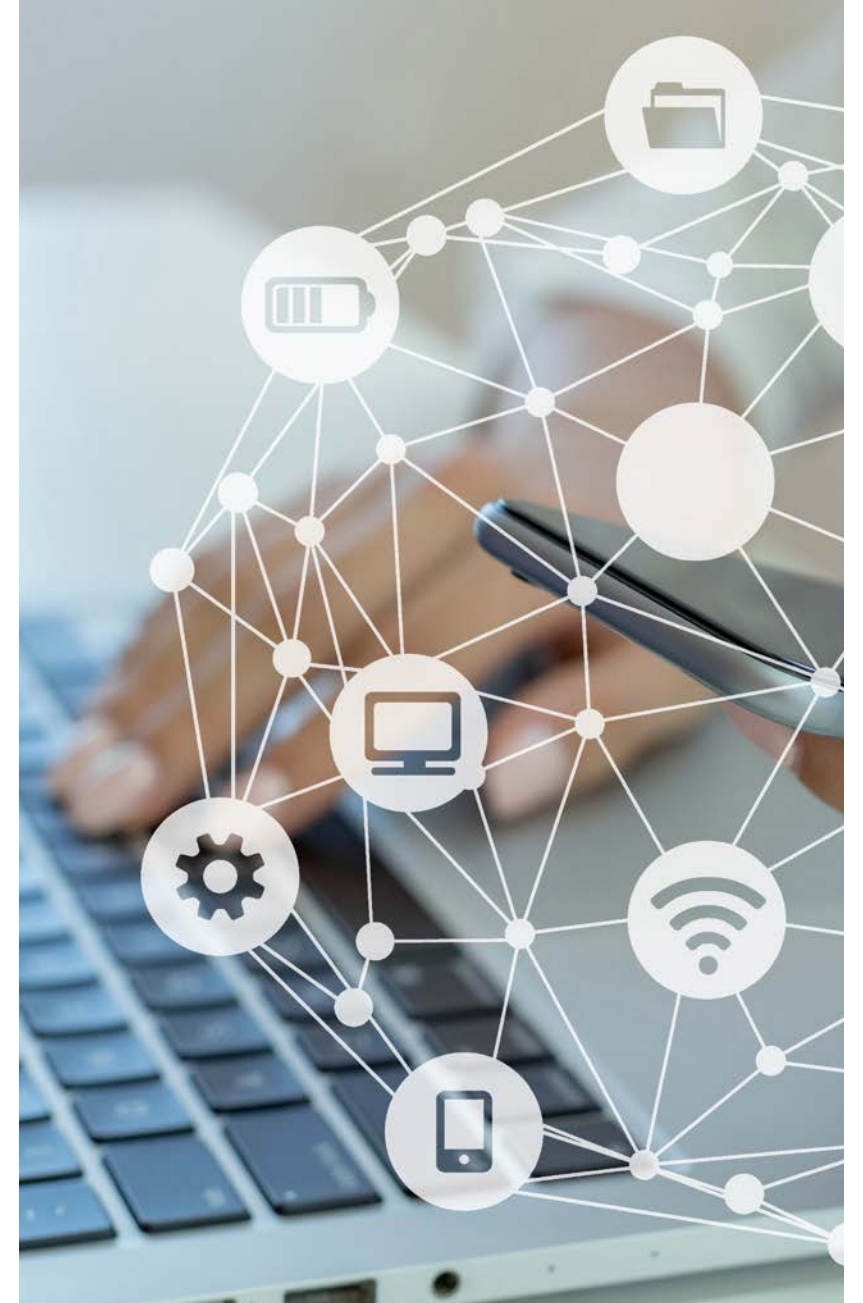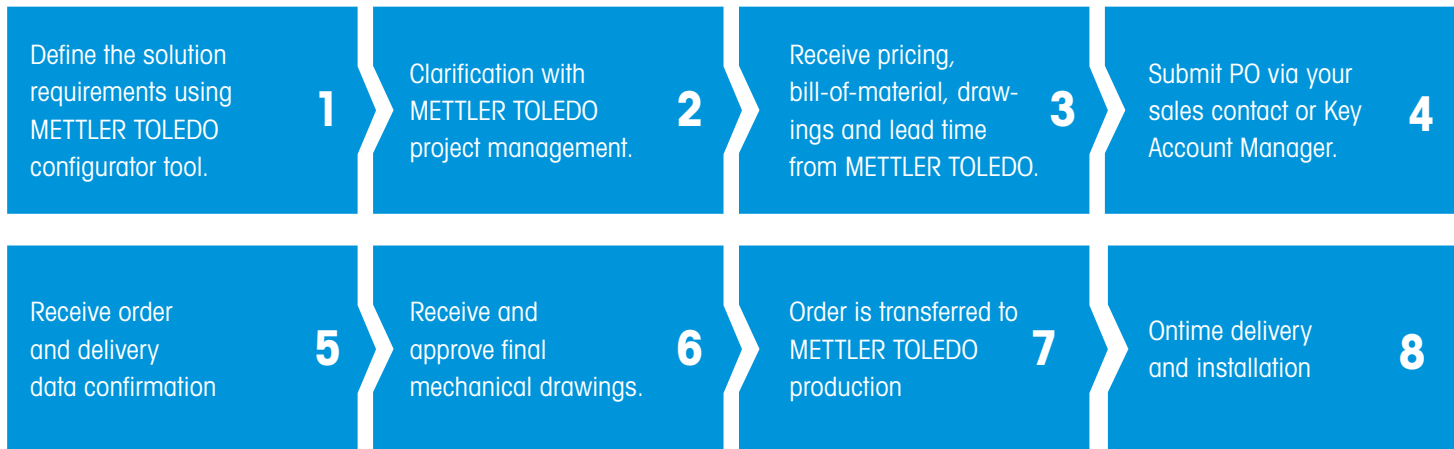*Upon receipt of order at manufacturing facility
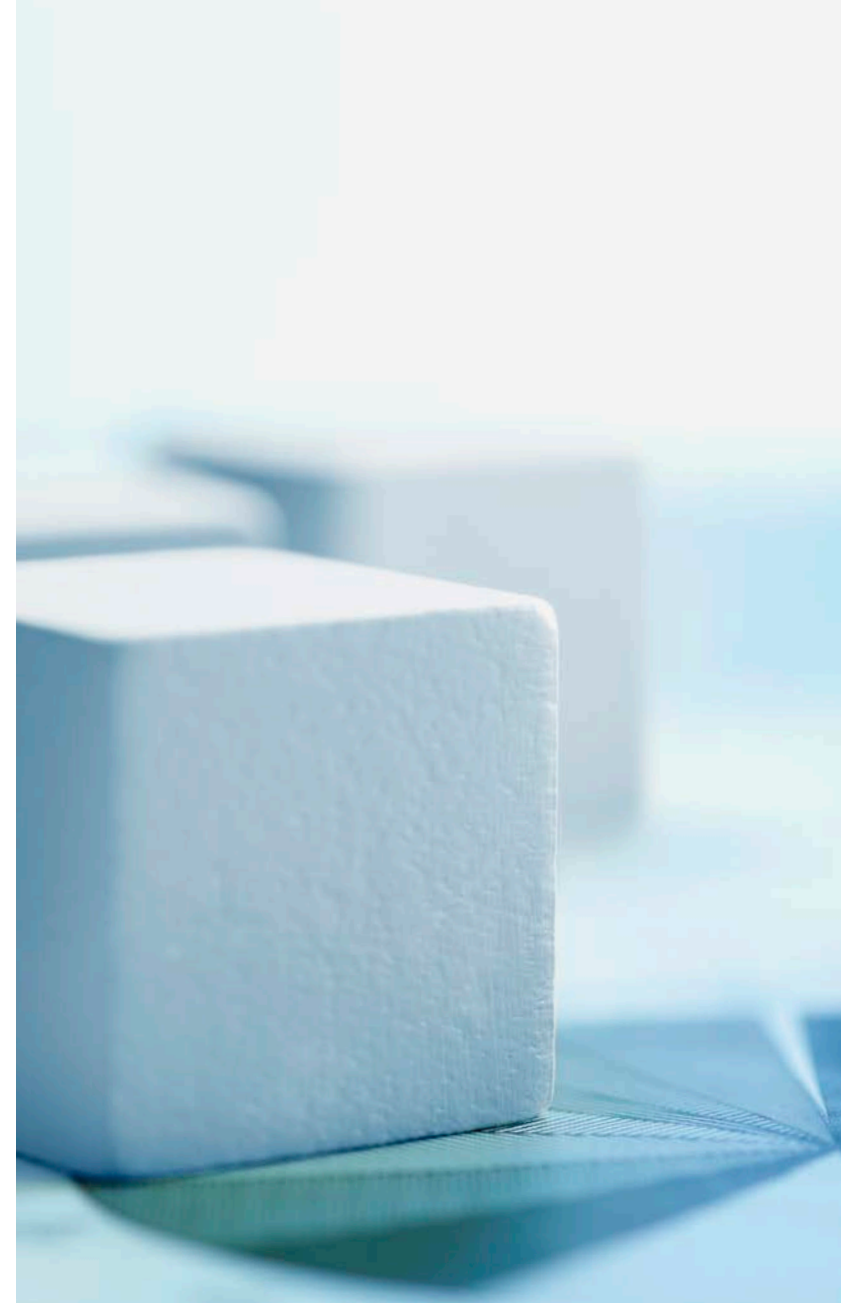
Order Process and Support

Efficient Roll-Out Starts with a Correct Order

To support with correct system specification and an efficient order process, we use an error-proof configurator tool that is used not only to create the system specification and bill-of-material but also to define drawings, lead times and pricing information. Quick access to this information sets the stage for efficient project roll out.

Define the solution requirements using METTLER TOLEDO configurator tool. **1**	Clarification with METTLER TOLEDO project management. **2**	Receive pricing, bill-of-material, drawings and lead time from METTLER TOLEDO. **3**	Submit PO via your sales contact or Key Account Manager. **4**
Receive order and delivery data confirmation **5**	Receive and approve final mechanical drawings. **6**	Order is transferred to METTLER TOLEDO production **7**	Ontime delivery and installation **8**

Get More Information

Visit our website for datasheets, drawings, white papers and more.

▶ **www.mt.com/transport**
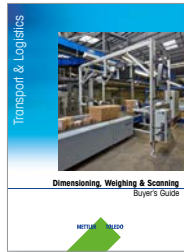
DWS Buyer's Guide

Discover practical and educational information for both experienced and first-time buyers of dimensioning, weighing and scanning systems.
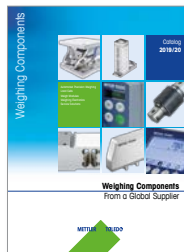
▶ **www.mt.com/DWS-Guide**

Transport and Logistics Service Brochure

Understand tailored METTLER TOLEDO Professional Services for Transport and Logistics equipment. Services include professional installation, calibration and verification, operator training, and testing and documentation.

▶ **www.mt.com/transport**

Weighing Components Catalog

Design your own solution. Discover our full range of weighing components for builders of instruments, machinery and process plants in our Weighing Components Catalog.

▶ **www.mt.com/ind-oem-catalog**

Industrial Weighing Catalog

The METTLER TOLEDO portfolio for industrial weighing and measuring is broad and extensive. Find exactly the solution you or your customer is looking for in our Industrial Weighing Catalog.

▶ **www.mt.com/ind-catalog**

www.mt.com

Visit for more information