Manufacturing

Industrial Weighing and Measuring

News

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Gain Operational Insights
Make the Most of End-to-End Traceability

Manufacturers are often challenged to quickly react to quality issues and recalls from both the supplier and customer side. End-to-end traceability is the key to identifying and coping with such unforeseen issues.

To gain optimal insight into your processes, utilize tools that provide end-to-end traceability. This means checking your data acquisition and connectivity options as well as ensuring you have rapid analyzing capabilities.

Gather data with weighing devices

Use weighing devices to check parts in each processing phase and collect the data. Integrated software collects data automatically, posing no disruption to the operator or need for manual data entry that can slow down progress or breed errors.

Right tools to forward and analyze data

Make use of gateways and connectivity options to transfer data from devices to networked infrastructure. Directly connect weighing equipment to your ERP or use software solutions to analyze, visualize and monitor all data gathered from your shop floor. Find optimization potential and react to real-time status information of the manufacturing process.
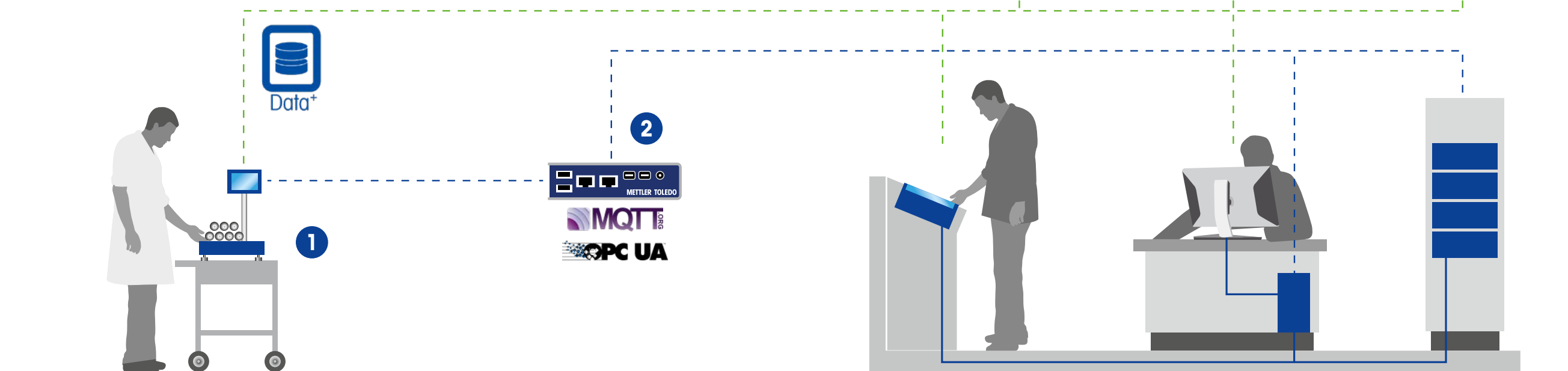
Read on to find out how you can improve insight into your processes with equipment from METTLER TOLEDO.

METTLER TOLEDO

Achieving End-to-End Traceability
Solutions from a Single Source

METTLER TOLEDO is your end-to-end solution provider for traceability. Our expertise in weighing helps you find the right solution for checking part weights and gathering data in each phase of your production process. Smart connectivity options manage the transfer of data for further processing in your ERP, and software helps you to monitor your processes.

▶ **www.mt.com/ind-4-0**

3 Collect+
Data Collection Software

ERP
Enterprise Resource Planning

InTouchSM
Remote Monitoring Software

Data+

2

MQTT.ORG

OPC UA

1

1
Gather and handle data with weighing devices and data tools

Gather data:
Weighing devices often provide the first contact with incoming goods in your plant. Start gaining insights into your processes right from the start to verify logistics quantities or control the quality of produced parts and components.

Handle data with Data+:
Track, import, export and edit data on PCs and weighing terminals with the data exchange tool, Data+. Eliminate the need for time-consuming manual recipe handling at the terminal. Easily manage articles with a wide range of weighing applications.

2
Connectivity options to forward data

Be prepared for the future of data management without neglecting your installed base. This is possible with edge-computing gateways that connect existing and new weighing devices with your network. Find out more about Industry 4.0 connectivity on the **following page**.

3
Software solutions and ERP integration for data analysis
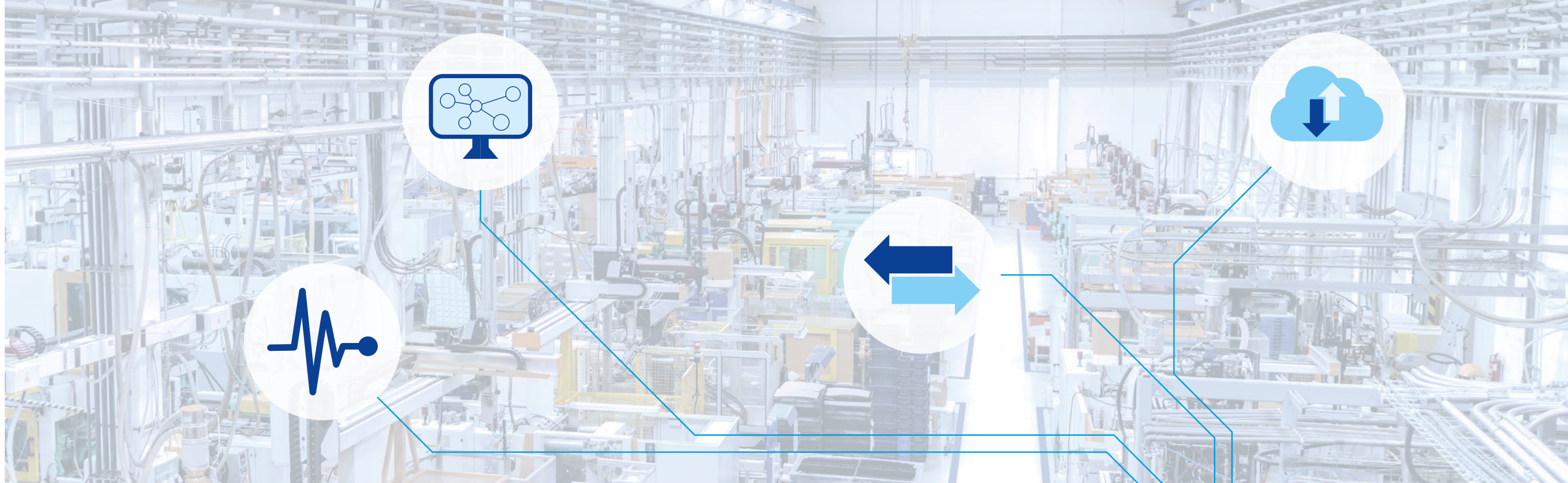
Collect+ software:
Analyze process data with Collect+ data collection from every scale in your plant. Easily visualize the results in customized dashboards. Find detailed information on **page 6**.
www.mt.com/CollectPlus

InTouch remote monitoring software:
The cloud-based tool InTouch prevents downtime and allows users to respond to issues quickly. All data transfer is protected with third-party accredited security measures. Find more information at:
www.mt.com/ind-InTouch

ERP integration:
Manufacturers are often challenged to integrate machine data into an ERP system. METTLER TOLEDO can make weighing data available directly in your ERP system using OPC UA / MQTT connectivity.

Be Ready for Industry 4.0
Connectivity for the Future of Data Management

OPC UA and MQTT are the new communication standards for exchanging non-time-critical data with ERP or cloud-based services. METTLER TOLEDO offers edge-computing gateways to connect new products to your installed base and reduce data traffic on your network.

Adopting technology to be ready for the future

Manufacturers seeking to upgrade their installed base for Industry 4.0 connectivity can rely on METTLER TOLEDO for the right equipment. Our solutions seamlessly connect devices to new network technologies including OPC UA and MQTT.

Open Platform Communications Unified Architecture (OPC UA)

OPC UA is a hardware- and software-independent interoperability standard for data exchange between devices from multiple vendors. It is the presumed Industry 4.0/IIoT format for future data communication. However, it cannot substitute for fast, real-time technologies such as Profinet or EtherNet/IP.

Message Queuing Telemetry Transport (MQTT)

This standard is originally designed for connections with remote locations, but it can also be used for company-internal communication. The technology is preferred by many customers as it is easy to implement on simple devices and requires little memory – a simple yet powerful solution.

Upgrading Your Installed Base for Modern Communication

The METTLER TOLEDO ACI400 Edge-Computing Gateway offers OPC UA and MQTT connectivity to upgrade existing bench, portable and floor scales to these modern communication technologies. The gateway can connect one or more existing or new METTLER TOLEDO weighing devices to networks using OPC UA / MQTT technology.

▸ **www.mt.com/ind-cloud-gateways**

Integrating weighing process data

See how to transfer weighing process data to higher-level cloud, MES or ERP systems and make processes more transparent and efficient.

www.mt.com/ind-weight-to-cloud

Total Visibility for Informed Decisions
Monitor the Manufacturing Process

Smart manufacturing software can make you aware of all ongoing actions in your value chain and help you improve processes through easy-to-use data visualization.

The right software can collect the process data from a wide range of devices, such as scale terminals and sensors from any location in the plant. You can retrieve the data directly via RS232, Ethernet TCP/IP or remote connection to Collect+.
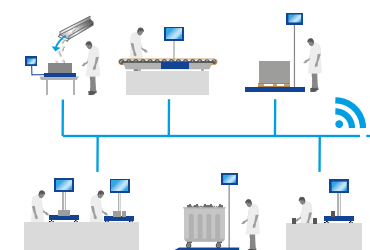
The standalone and networked software solutions offer various viewing options for dashboards including the ability to view data on PCs, tablets or mobile devices from anywhere in your plant. You can also share web links with offsite colleagues so they can have immediate insight into current reports as well.

▶ **www.mt.com/CollectPlus**

The Collect+ advantage

Connect manual assembly, parts-counting or packaging workstations throughout your plant to this comprehensive quality-monitoring software. Collect+ captures weight and process data to help optimize your processes, giving you immediate insight into both automated and manual operations. Dashboards are viewed easily on PC as well as mobile devices.

Collect your data
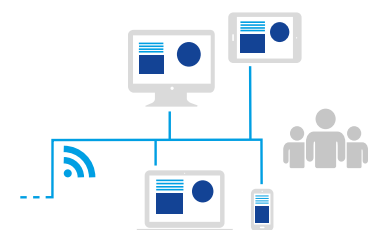
Using Collect+, you can:
- Collect weighing data from all measuring devices, no matter the location
- Include data from application-based devices such as barcode scanners or temperature sensors
- Include data from METTLER TOLEDO and third-party devices
- Eliminate hand-written manual data recording

Visualize your processes

Analyze your data on easy-to-understand dashboards and filter information you need to monitor. Examples include:
1. Actual production output
2. Ratio of good to bad parts in daily production
3. Yield/throughput rates
4. Quality data from completeness checks
5. Productivity ratios over time

Make informed decisions and share results

- Share results from single and multiple lines on a comprehensive dashboard for immediate production insight and coordination
- Generate reports on a PC or mobile device for easy analysis anywhere, anytime and find optimization potential in the areas of quality control, waste reduction and more
- The collection and analysis of data on a single platform is your perfect decision-making tool to help you increase throughput, improve processes and reduce costs by handling quality issues in real-time

Zero-Error Picking and Packing
New Solution for Manual Processes

Manual picking processes are prone to errors. Missing small parts and the inability to detect failures make these processes a constant source of quality issues. Avoid extensive rework, additional costs and customer complaints with new, scale-assisted Pick&Pack.

▶ **www.mt.com/ind-pickandpack**

Pick from any box

Pick parts, components or manuals with this solution. Pick from a single workplace or from different warehouse locations. Change picking orders and quantity easily. This mobile solution lets you pick parts in any combination.

Conveniently edit picklist

Create, edit and distribute your picklist or order to all available scales on the shop floor. The convenient Data+ tool allows fast and error-free data entry on a PC.
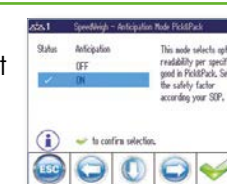
Step-by-step guidance and prompting

Operators are guided through the picking process. This can be shelf locations, handling instructions or packaging material information. Benefit from achieving zero errors, since the application can only continue if the right part and amount is picked.

Print labels

Create labels and data entries or retrieve weighing data for traceability and customer audits. Display the complete picklist, quantities, operator and much more information on a printout.

Small parts and mixed items

Pick small parts like screws, bolts and washers in different quantities and with different sizes, shapes and weight into one container error-free. Add pre-packed kits or components and work with different container and package sizes.

Boost your pick process: SpeedWeigh™
Speed up picking processes by up to 50 percent with Anticipation Mode. This feature ensures the optimal readability is used during each step.
www.mt.com/ICS685

Product Portfolio

Gain Production Efficiency
Solutions Fit-for-Use

Manufacturing processes are diverse and call for specialized options to achieve satisfying results in each production area. METTLER TOLEDO provides a wide range of weighing applications that address the individual needs of each step throughout your production workflow. Our team of experts can help you define your required application functionality and choose the bench scale that will offer you the best fit for ease, productivity and accuracy.

Improve production with weighing
Lean manufacturing can help minimize costs and maximize efficiency. Find out how weighing solutions can improve your processes.
www.mt.com/ind-lean-manufacturing

Improve Parts Production with Counting Scales
Use counting scales to count parts and components in production and verify production quantities. You can also verify incoming goods, pick orders and build batches. Find the platform that fits for your process requirements and weight range.
▸ **www.mt.com/dry-bench-scales**

Define the application you need and select your terminal

		ICS685	ICS465	ICS445	ICS435	ICS425
	Basic weighing Simply weigh your goods. This application is widely used in shipping environments.	✔	✔	✔	✔	✔
	Counting Easy piece counting in areas such as shipping departments or inventory control can significantly increase throughput.	✔	✔	✔	-	-
	Over/under checkweighing Manual checkweighing with easy-to-read displays spots over- and underweight goods. Useful in shipping departments.	✔	✔	✔	-	-
Σ	**Totalizing** Useful application for the packaging area. Accumulate single pieces or components to a defined target weight. The scale can save individual product or package data.	✔	✔	✔	-	-
	Filling Accurate filling of containers, tanks or production machines with specified product amounts (for example, optimal filling of plastic granulate into a molding machine).	✔	-	-	-	-
	Classifying Categorize products into predefined classes by weight. For example, quickly and easily sort different screw sizes.	✔	-	-	-	-
	Formulation Also known as recipe weighing to create perfect mixtures. The manual mixing of components follows a predefined recipe, for example mixing powder metals.	✔	-	-	-	-
	Pick&Pack Pick parts, bags, components or manuals with this application. A new solution supports error-free manual processing, such as picking goods for an order or packing kits or sets that contain different products. Learn more about this new solution on 8 and 9.	✔	-	-	-	-

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Errors, Throughput and More
Solve Application Challenges

See how you can increase operator efficiency, improve order fulfillment accuracy and reduce costs by adding scales to your processes. Explore counting, checkweighing and quality-check applications throughout your supply chain and discover benefits such as:

- **Material receiving:** Enable fast verification of incoming goods counts
- **Warehousing:** Know your inventory and update it at anytime
- **Production, quality control and assembly:** Increase throughput by up to 20 percent via fast counting, early error-detection and parts and kit verification
- **Order fulfillment and packaging:** Prepare zero error packages for less rework and fewer customer complaints

Watch the Manufacturing applications video:
▶ **www.mt.com/automotive**

YOUR VOICE MATTERS

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for a chance to win an Apple Watch!

To take the quick survey, visit:
www.mt.com/ind-survey-2019

www.mt.com/ind-ma

For more information

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