

# Piece Counting



**Every Piece Counts**  
For Your Profit

**METTLER** **TOLEDO**

# Every Piece Counts For Your Profit



## 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 commissioning.



## Profit in Three Ways

Accurate and fast operation  
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**Counting scales are used in different industries including automotive parts manufacturing, electronics, plastic or metal components production, paper manufacturing or distribution warehouses. Accurate and efficient material management is the basis for successful, profitable production. METTLER TOLEDO counting scales can be easily incorporated into inventory management systems. That increases process reliability and productivity while efficiently controlling incoming and outgoing goods.**



### Production

Process automation and fast user guidance are essential to increase production efficiency and consistency. Semi-automated counting solutions assure efficient packaging right in production. Parts required for assembly are rapidly and precisely counted.



### Logistics & Shipping

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



**Integrated data management**  
page 6-7

**Results to rely on from the start**  
page 8-9

# Easy Operation

## Avoid Errors, Speed up Processes

**Straightforward manual operation increases efficiency and accuracy in piece counting. METTLER TOLEDO scales feature advanced, easy to use counting applications. Operators just have to count the sample pieces, place them on the platform, press the predefined sample key and start counting immediately.**

Avoid Errors



Intuitive user menus prevent operator errors and fatigue during routine tasks. Configurable softkeys allow fast access to key functions at a keystroke. Users are guided through the counting task in their language.

Increase Speed



While counting pieces using a weighing system, operators typically have to concentrate intensely on the terminal display, slowing down their process. The colorWeight® function indicates, using different colors, when the target is reached. This spares the operator's concentration, speeds up the task and saves time and money.

Save Time



In order to reduce wasteful transportation time, distances between the picking place and the counting scale need to be reduced. Mobile scales with rechargeable batteries and wireless communication do a perfect job. For further comfort and to ease operators work the best ergonomic position of the counting scale can be chosen: compact, with column or table model.



## Key Features & Benefits:

- Fast access to key functions at a keystroke
- Easy database entry or recall with barcode scanner or external keyboard
- Immediate indication if target count is reached with colorWeight® display
- Selectable languages: English, Chinese, German, Spanish, French, Italian
- User profiles with dedicated functions such as assigned softkeys, language, user prompting or locked hard keys

### Reduce Errors when Determining Average Piece Weights

Counting large quantities for reference (sample) determination by hand is tedious and opens possibility to errors. However, sampling 30 or more parts increases counting accuracy. With the Automatic Reference Optimization feature the scale assists the user in achieving a more accurate result with less errors. The operator hand counts 10 pieces and establishes the average piece weight. Then the operator places a few more pieces on the scale after which the Reference Optimization function will automatically recalculate the more accurate average piece weight.

Watch the scales in action:  
► [www.mt.com/ind-ics5-easy](http://www.mt.com/ind-ics5-easy)



# Integrated Data Management

## Analyze, Trace and Document

**Efficiently counting thousands of parts demands smart handling of numerous data points. Facilitate your daily counting jobs with counting scales featuring powerful databases with transaction memories that record all counting results for analysis and various printing options.**

### Easy Data Analysis and Full Traceability

Database		
Article	Description	Article info
Screw 1	M5	
Screw 2	M6	
Screw 3	M8	
Screw 4	M10	



Simplify monitoring and analyzing of weighing data with configurable databases. Analyze and trace all counting results in a transaction memory including date/time and operator ID. Benefit from a scale embedded or central (host) article database for up to 30,000 articles. Easily import or export data from the scale to Microsoft® Excel®.

### Fast Data Handling



Gain efficiency by connecting barcode scanners to automatically recall article information, such as average piece weight and directly start with counting. Connect the scale to another IT system, such as SAP, or import/export article or transaction data with USB memory stick, Ethernet or wireless communication. Easily configure the scale and database on a PC.

### Facilitated Documentation



Customized labeling and full result documentation are key to fulfilling your customers needs or to comply to industry standards such as Odette, AIAG or Galia. METTLER TOLEDO offers integrated printing solutions tailored to your application. Different formats can be defined including barcodes, article number, date, time or customer logo. Whether you have to print labels, strips, or forms we provide a solution.



## Key Features & Benefits:

- Scale embedded or central database for up to 30,000 articles
- Transaction memory to easily monitor all counting results
- Easy import/export databases and transaction data to Microsoft® Excel® for further statistical analysis
- Connectivity to external IT systems in various ways
- Pre-defined and user-definable printing templates
- PC-software DatabICS to easily configure the scale

### Automate Your Counting Task

Reduce inefficient transportation to packaging stations and significantly reduce your staff's involvement in parts counting with semi-automated counting directly at the production machine. Scales can control third party devices such as conveyor belts and stop or redirect parts filling as soon as the target piece count is reached. They also can alert operators by controlling external light or audible alarms. Tolerance such as target count or the average piece weight can be automatically called up from the article database by simply scanning a barcode or selecting an article ID.

Watch the scales in action:

► [www.mt.com/ind-ics5-smart-data](http://www.mt.com/ind-ics5-smart-data)



# Accuracy Counts

## Reliable Results from the Start

**The concept of piece counting with a scale is quite simple. Counting accurately and efficiently can be a challenge. Errors occur when various factors influence the counting process, such as piece weight variation. Proper sampling and high-precision reference scales deliver accurate quantities from the start.**

### Dealing with Piece Weight Deviation



Piece weight deviation is one of the most frequent sources of counting errors. Piece weights can differ due to the use of different machines, tool wear, raw material inconsistencies or changing environmental conditions. If parts have a high deviation of more than 1 percent, the counting error can be cut in half by increasing the number of reference (sample) parts for example from 10 to 30 pieces.

### Highest Accuracy for Reliable Results



Accurate average piece weight determination is dependent on the appropriate counting resolution of the counting scale. To achieve a high counting resolution, the quality of the weighing electronics in terms of repeatability needs to be superior. METTLER TOLEDO counting scales feature proven counting resolutions of up to 1,200,000d, allowing minimum reference weights<sup>1)</sup> from 0.05 g with a process tolerance of 1%.

### Precise Counting from 1 mg to 3,000 kg



The lightest and heaviest parts influence the type of counting scales required. When counting a variety of parts, a two-scale system provides accuracy and flexibility. To precisely determine the average piece weights, connect a 0.1 mg reference scale and count small pieces on a 0.6 kg to 6 kg scale. For medium weights, connect a bench scale up to 600 kg, and for heavy weights, use a floor scale for up to 3,000 kg.



## Key Features & Benefits:

- High-resolution reference (sample) scales precisely determine the minimum reference weight<sup>1)</sup>
- Automatic Reference Optimization increases counting accuracy by adding number of reference pieces without hand-counting
- Multiple scale solutions increase the accuracy and flexibility to count a variety of parts with one system

### Accurate Reference Weight

Accurate reference (sample) weight determination has a great effect on counting accuracy. Using a high-precision scale to weigh samples significantly increases counting accuracy. Investing in a suitable reference scale pays back, as mistakes made here translate to big counting errors later. Furthermore, a smaller minimum reference weight allows for counting lighter piece weights and/or reduces the number of reference pieces. The fewer reference pieces to count, the faster and less error prone your counting process.

<sup>1)</sup> see definitions on page 10

**Selection Guidance for Counting Scales:**  
► [www.mt.com/gwp-rec-counting](http://www.mt.com/gwp-rec-counting)



# Complete Offering

## High Throughput and Consistency

**Speed counts in today's competitive environment. Manufacturers must not only deliver error-free, high-quality products, but also need to produce on time. Benefit from a complete counting scale portfolio with intuitive user menus facilitating your daily counting jobs. High-precision weighing technology delivers consistent results.**

### Compact Scales ICS4\_5/ICS685: Small Size (XS, SM), Large Size (LA)

Applications	Counting, Totalizing, Over/Under Checkweighing/Counting, Simple Weighing			
Databases	Article database (up to 30,000), Transaction memory (up to 300,000 entries), DatablCS PC software to manage database			
Display	Graphical display (ICS4_5/685), colorWeight® (ICS465/685), full color display (ICS685)			
Housing	Robust die-cast aluminum, up to IP65			
Dimensions	XS, SM: 247x364x95-105 mm, LA: 357x404x110-120 mm			
Platform size	XS: 160x130 mm, SM: 240x200 mm, LA: 350x240 mm			
Interfaces	RS232, RS422/485, USB host/device, Ethernet, WLAN, Digital I/O			
Platforms	Up to 3 additional weighing platforms attachable, SICSprom or analog			
Model	Capacity	Readability	Minimum Reference Weight <sup>1)</sup>	Minimum Average Piece Weight <sup>2)</sup>
ICS_5k-0.6XS/f	0.6 kg	0.001 g	0.05 g	0.005 g
ICS_5k-0.6XS/DR/f	0.12/0.6 kg	0.001/0.01 g	0.05 g	0.005 g
ICS_5k-3XS/f	3 kg	0.01 g	0.5 g	0.05 g
ICS_5k-3XS/DR/f	0.6/3 kg	0.01/0.1 g	0.5 g	0.05 g
ICS_5k-6XS/f	6 kg	0.01 g	0.5 g	0.05 g
ICS_5k-6XS//DR/f	1.2/6 kg	0.01/0.1 g	0.5 g	0.05 g
ICS_5k-6SM/f	6 kg	0.1 g	0.5 g	0.05 g
ICS_5k-6SM/DR/f	1.2/6 kg	0.1/1 g	0.5 g	0.05 g
ICS_5d-3SM/f	3 kg	0.5 g	2.5 g	0.25 g
ICS_5d-6SM/f	6 kg	1 g	5 g	0.5 g
ICS_5k-15LA/f	15 kg	0.1 g	5 g	0.5 g
ICS_5k-15LA/DR/f	3/15 kg	0.1/1 g	5 g	0.5 g
ICS_5k-35LA/f	35 kg	0.1 g	5.8 g	0.58 g
ICS_5k-35LA/DR/f	7/35 kg	0.1/1 g	5.8 g	0.58 g
ICS_5d-15LA/f	15 kg	2 g	12.5 g	1.25 g
ICS_5d-35LA/f	35 kg	5 g	30 g	3 g



ICS\_5 XS size



ICS\_5 SM size



ICS\_5 LA size



ICSS4\_5, ICS685 terminals

<sup>1)</sup> Minimum Reference Weight which the scale can determine with a process tolerance of 1% at 2s (2 Standard Deviations / in 95.4% of the cases).

<sup>2)</sup> Minimum Average Piece Weight = Minimum Reference Weight / Number of Reference Pieces (10 parts) with a process tolerance of 1% at 2s.

To achieve smaller Average Piece Weights increase number of reference pieces.



## Selection Guidance for Counting Scales

To determine the right counting solution for any process requirement, METTLER TOLEDO has developed a unique qualification service called Good Weighing Practice™ (GWP®). Based on your process tolerance, parts weight and its deviation, the GWP® expertise helps you to choose the appropriate counting scale.

► [www.mt.com/gwp-rec-counting](http://www.mt.com/gwp-rec-counting)

### PC-Terminal: IND890

<b>Applications</b>	Counting, Totalizing, Over/Under Checkweighing/Counting, Programmable/Customizable Applications
<b>Display</b>	Three sizes: 10.2", 15.4", 18.5", Widescreen TFT display
<b>Housing</b>	Stainless steel IP69k
<b>Interfaces</b>	RS232, RS422/485, USB, Ethernet, WLAN, Digital I/O
<b>Platforms</b>	Up to 4 weighing platforms simultaneously, IDNet, SICSpres or analog



### K Line platforms

High-precision scales that can be table, stand, and floor-mounted for use in harsh industrial environments. Can be used as reference scales or bulk scales.

<b>Capacities</b>	3–3,000 kg
<b>Readabilities</b>	0.01–50 g
<b>Min. Ref. Weights</b>	0.25–250 g
<b>Platform sizes</b>	280 × 350 to 1,500 × 1,500 mm



### M Line platforms

Scales that can be table, stand, and floor-mounted for use in harsh industrial environments. Can be used as reference scales or bulk scales.

<b>Capacities</b>	15–3,000 kg
<b>Readabilities</b>	1–1000 g
<b>Min. Ref. Weights</b>	10–2000 g
<b>Platform sizes</b>	280 × 350 to 1,500 × 1,500 mm



### X204S / X404S Reference scales

Reference scales for light parts

Model	Capacities	Readability	Min. Ref. Weights
<b>X204S</b>	200 g	0.0001 g	0.02 g
<b>X404S</b>	400 g	0.0001 g	0.03 g

Platform size: 90 mm Ø

### Pallet / pallet truck scales, roller tops

Do you have special requirements for the design, mobility and weighing performance of your scale? Please contact us and we will find an individual solution for your application.

<b>Capacities</b>	300–3,000 kg
<b>Readabilities</b>	100–1,000 g



### PFA574 / 575 Floor scales

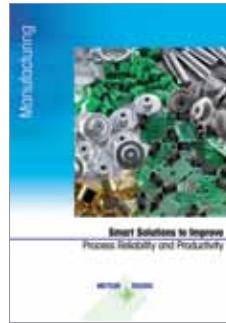
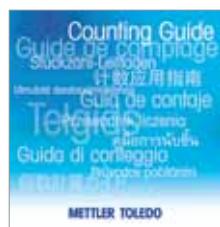
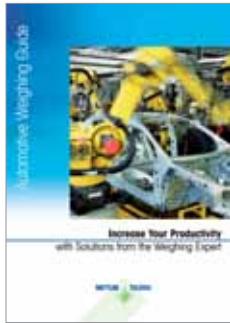
Coated or hot-dip galvanized floor/rack-mounted scales for use as bulk scales in harsh industrial environments.

<b>Capacities</b>	300–3,000 kg
<b>Readabilities</b>	100–1,000 g
<b>Platform sizes</b>	1,000 × 1,000 to 1,500 × 2,000 mm



# Access Information and Know-how

► [www.mt.com](http://www.mt.com)



## Application Know-how

Benefit from a wide array of brochures and guides.

Comprehensive information enables you to improve your processes.

Counting Know-how

► [www.mt.com/count](http://www.mt.com/count)

Selection Guidance for Counting Scales

► [www.mt.com/gwp-rec-counting](http://www.mt.com/gwp-rec-counting)

Manufacturing Competence Brochure

► [www.mt.com/manufacturing](http://www.mt.com/manufacturing)

Automotive Weighing Guide

► [www.mt.com/ind-automotive](http://www.mt.com/ind-automotive)

## Value Calculators

Download our calculators and find out how much you could be saving.

► [www.mt.com/counting-calculator](http://www.mt.com/counting-calculator)

► [www.mt.com/ind-colorweight-calculator](http://www.mt.com/ind-colorweight-calculator)

## Webinars

METTLER TOLEDO offers both live webinars where you can speak directly with our specialists and recorded on-demand webcasts, which are available at your convenience 24 hours a day.

► [www.mt.com/ind-counting-webinars](http://www.mt.com/ind-counting-webinars)

**[www.mt.com/count](http://www.mt.com/count)**

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