



**sartorius**  
mechatronics

## Weigh | Detect | Control Products for Your Processes



turning science **into solutions**





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# Our Solutions for Your Process

From incoming to outgoing goods: Our solutions for your process. Production processes may be similar; however, no two installations are ever the same. That is why we not only offer an

extremely wide range of products and services but, by way of individual consultation, we also develop solutions that are precisely custom-designed for the specific application.







## Incoming Goods Inspection

Raw materials, primary products and semi-finished goods are delivered in the widest variety of containers and quantities. Exact measurement and logging of the supplied quantity is the basis for all subsequent processing steps.

Sartorius offers a particularly wide range of products for this task: Desktop, benchtop and floor scales and components for equipping hopper and tank scales and road vehicle weighbridges. An extensive range of accessories and a large selection of interfaces allow easy, user recognition and management as well as integration into inventory control systems.

## Inventory Management

Precise inventory management and reliable data form the backbone of advanced, lean warehousing and highly accurate provision to the subsequent processes.

Strictly batch-related management facilitates exact traceability. This creates security and supports PPS and MES systems in the best possible way. Manual, semi-automatic and fully automatic additions to and withdrawals from stock are supported by means of comprehensive connection options and operator terminals: Plain text operator guidance, barcode scanners through to the connection of RFID writing and reading devices – with Sartorius you are equipped for the future.

## Production

The availability of systems and their components is at the heart of efficient production. And our products offer a host of additional benefits alongside their already proverbial accuracy and ruggedness. Maximum resolution and accuracy allow the flexible use of production resources.

From leading-edge fieldbus and Ethernet technology to wireless communications – all data is transparent for use in other systems. And all this is complemented by many useful additional functions: from highly accurate automatic batching to continuous discharge control. Always exactly as the process and our customers require.

## Quality Assurance

Today, quality assurance is an integral component of the value-added chain and extends far beyond merely checking whether an item is OK or not. Advanced systems from Sartorius not only recognize variances in quality – they actively help to prevent such variances.

In addition to complying with current standards, such as HACCP, IFS, ISO 22000, Ford Q101 and prepackage requirements, our systems deliver data and information, allowing processes to be controlled more effectively. Intelligent equipment from Sartorius detects trends and puts corrective actions in place even before a tolerance limit has been exceeded. In this way, quality assurance becomes quality control. This is where it shows how well all elements have worked together all along the process chain.

## Outgoing Goods

Sartorius technology now makes it possible to meet the highest safety requirements, such as 100% inspection for contamination using state-of-the-art metal detection.

Checking completeness and filling quantities in accordance with legal requirements, recording each batch and providing complete documentation all the way to certified recording of quantities of goods supplied and generating the appropriate documents according to the requirements of legal metrology – Sartorius systems do it all, promptly and accurately.

## Our Expertise in Industry – Solutions for All Sectors

Each sector of industry – whether it be food, pharmaceuticals, chemicals or processing – is characterized by quite specific environmental and production conditions, standards and regulations.

As a result of our many years of experience, we know these characteristics in intimate detail and therefore work constantly on innovative new products and solutions – in order to organize your processes even more effectively and safely.







## Food

### We support your processes:

- Recording of Weight Measurements|Completeness Control
- Parts Counting
- Detection of Foreign Objects
- Measurement of the pH
- Moisture Analysis and Conductivity Measurement
- Data Acquisition
- Formulation
- Filling and Dosing

In the food industry, any possibility of errors during manufacture which might cause products to become inedible must be ruled out. Consumer protection is the top priority. For this purpose we offer solutions which meet uncompromisingly the numerous standards and regulations such as HACCP, EHEDG and IFS while also providing Ex protection.



## Pharmaceuticals

### We support your processes:

- Detection of Foreign Objects
- Completeness Control
- Conductivity Measurement and Moisture Analysis
- pH and Redox Potential
- Ion Analysis
- Fill Quantity Control
- Order Picking
- Pharmacopeia
- Formulation | Recipe Management

Confidence in suppliers and confidence in measurement and control technology minimize the risks in pharmaceuticals production. Sartorius products are GMP and GAMP compliant, clean room compatible and ideally suited to the required datastreams (e.g. OPC drivers). For the safety and efficiency of your pharmaceuticals processes!



## Chemicals

### We support your processes:

- Measurement of the pH
- Tank and Hopper Weighing
- Recipe Management
- Moisture Analysis
- Filling and Dosing
- Batching
- Detection of Foreign Objects

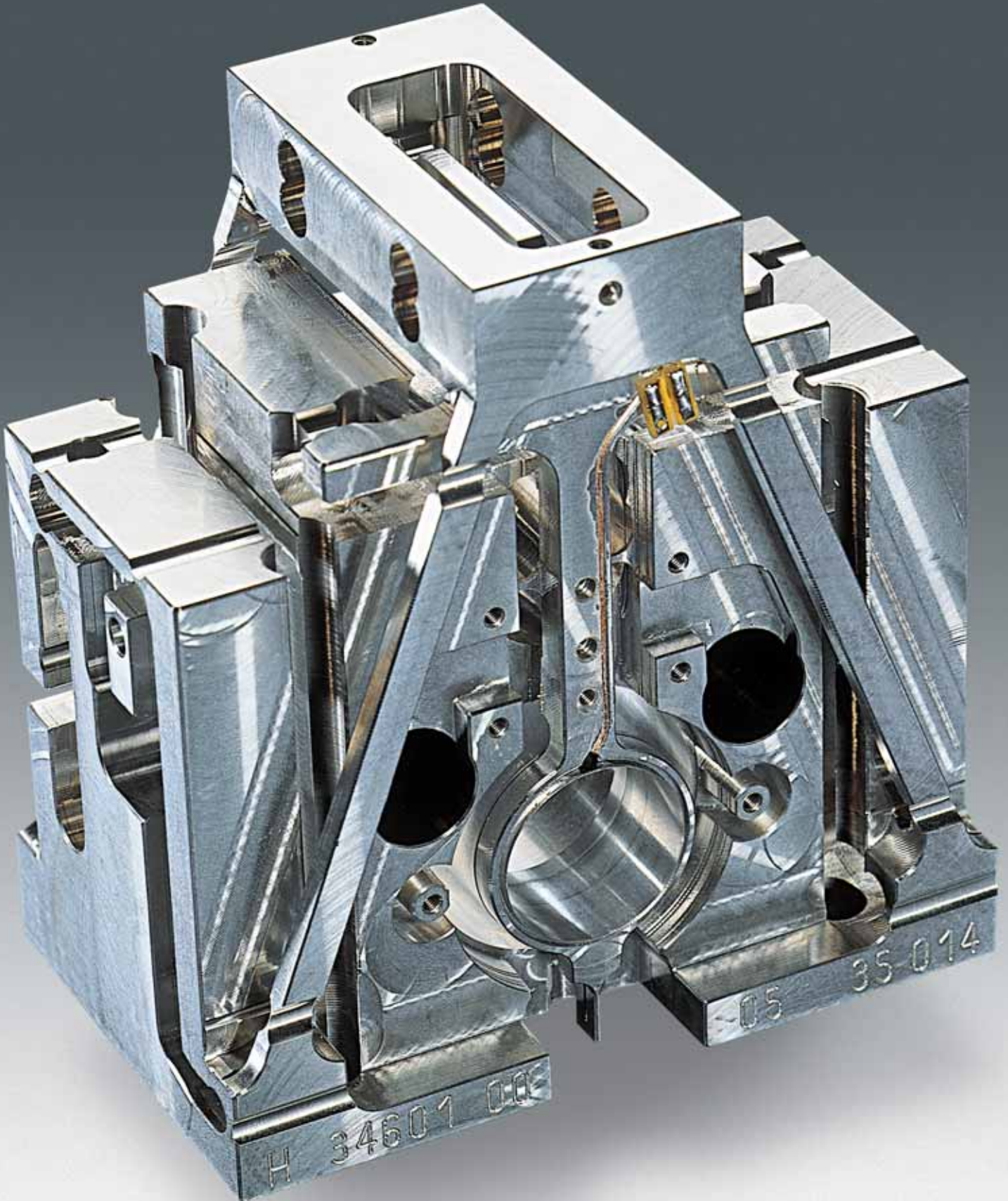
As varied and complex as processes in the chemicals industry may be – one thing they all have in common is high safety standards. Our explosion-proof weighing equipment guarantees safety without compromise. Naturally our products are also suitable for the increased requirements on ingress protection and corrosion protection under critical ambient conditions.

# Our Process Expertise

Process optimization is one of the main driving forces for innovation at Sartorius, whereby our experience-based knowledge of our customers' processes, above all, is of great assistance in addition to our high level of technological expertise.

We make all this knowledge – accumulated over decades – available to our customers in unique products and services.

**For our success is based on the success of our satisfied, successful customers.**







## Dynamic checkweighing

"Trust is good – control is better" – or "better be safe than sorry." With highly precise, dynamic weighing systems, you can assure and optimize the specified weight of your products.

Our products are uniquely outstanding for their modular design, high performance conveying systems and easy maintenance.

- Wide range of designs and performance classes
- Modular construction for maximum flexibility
- Unsurpassed processing quality and reliability



## Counting

A flagship application for Sartorius, using all the expertise of the Mechatronics Division to the fullest. The highest resolution and accuracy provide fast, precise counting results – with the easiest possible operation. It's all down to the experience of Sartorius.

- SPEED UP technology for accurate counting results in less than half a second
- Automatic reference sample optimization for the highest counting accuracy
- Product memory and alphanumeric keypad simplify operation
- Interfaces for easy connection to inventory control systems



## Metal detection

Protection for both consumer and machine thanks to state-of-the-art metal detection technology. Reliable detection of metallic contamination, even through aluminized packaging. Self-optimizing, self-learning and meets all documentation requirements.

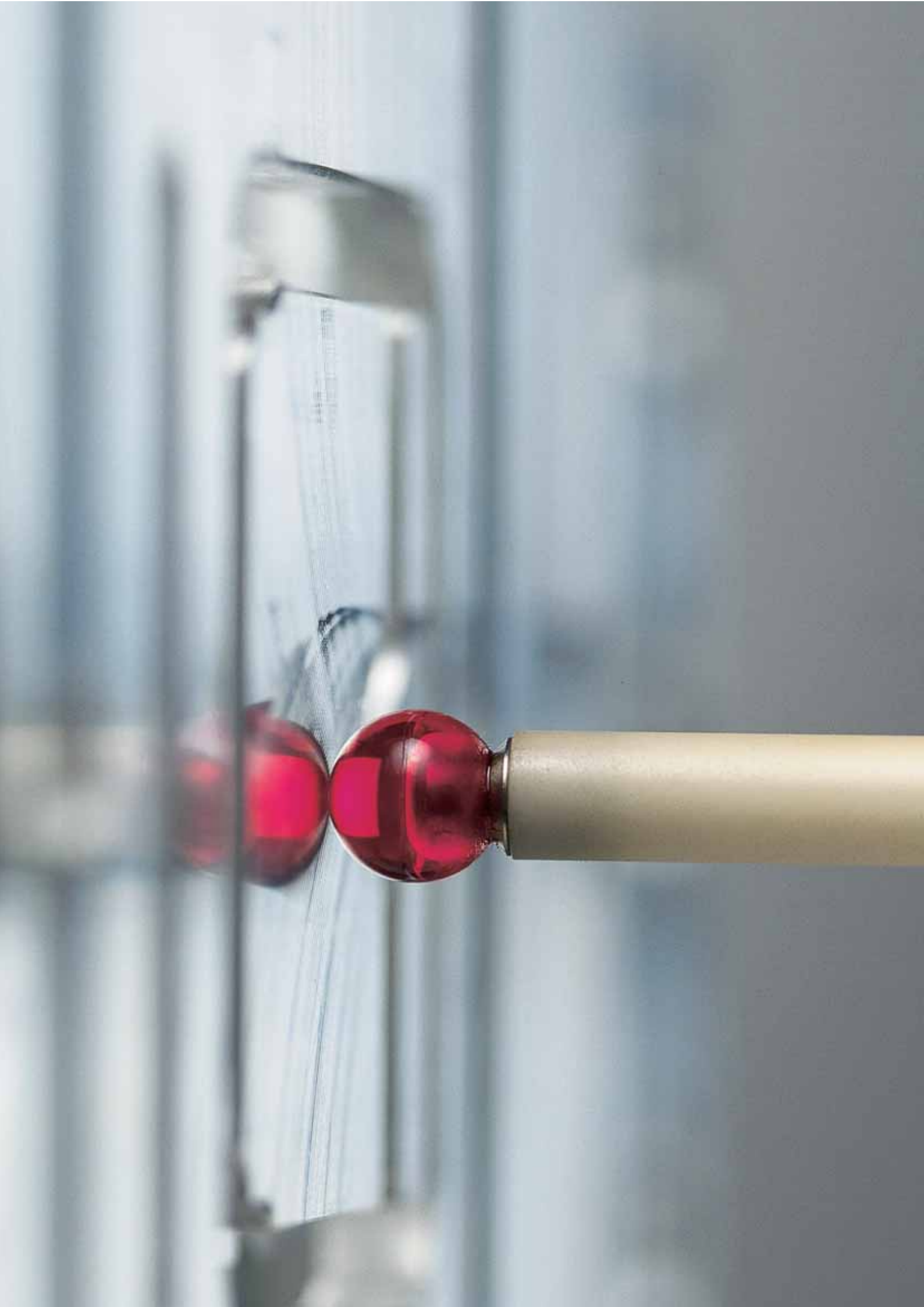
- Multi-frequency systems and multi-channel technology guarantee safe detection, unsusceptible to disturbances
- Numerous QA functions support complete documentation as proof of quality assurance
- Particularly simple, safe operation with integrated online help
- 4 different equipment ranges



## Moisture Analysis | Process Analytics

Foods, chemical or pharmaceutical products, building materials or animal feed – you name it, the moisture or water content has a decisive impact on price, processability and quality ranging from raw materials to final products. Determining this content is one of the most common analyses performed in product development and in the manufacturing process. As one of the leading manufacturers and suppliers of moisture analysis equipment, Sartorius thoroughly understands the needs of its customers and offers a truly wide array of analyzers and systems based on the following technologies:

- Infrared drying
- Microwave drying
- Microwave resonance technology
- NIR technology (NIR spectroscopy)
- Coulometry – selective detection of water







## Ex solutions

Safety is our strength. From high-resolution precision scales at manual weighing stations to heavy-duty vessel scales for reactors and mixers in the chemicals industry. The basis for this is our ATEX-certified quality management system and sophisticated circuitry and equipment technology. Compliant with standards, mutually compatible, rugged and practical. And, as a global supplier, our weighing equipment also meets international standards, such as NEC, FM and CSA.

- Advanced, intrinsically safe weighing equipment, particularly user-friendly
- Repeatable results and maximum safety for harsh industrial applications
- Verification of intrinsic safety for combinations of different components as a convenient inclusive service



## Manual recipe control

Stringent demands for traceability and documentation consistently present a challenge in manual weighing processes. Sartorius has decades of know-how in this field. In combination with our intelligent weighing stations and sophisticated operator guidance, all current regulations and legal provisions are met – without limiting performance or flexibility.

- Automatic calculation of reference values for active ingredients and neutralizing agents or auxiliary components
- Recalculation of reference values following violation of limit thresholds
- Capable of validation according to GAMP | FDA 21CFR Part 11
- Powerful campaign and batch weighing



## Automatic batching

Transparent management of raw material and recipe data using a database make automatic batching easy and highly efficient with system controllers and recipe and production management systems from Sartorius. Consistent compliance with international standards and the open system architecture allow easy data exchange and seamless integration into higher-level systems.

- Open batch management system for Sartorius controllers and programmable logic controllers (e.g. SIEMENS S7)
- Integrated material management with stock monitoring and traceability
- Connection in accordance with Batch Standard ANSI/ISA S88.01 via OPC
- Extensive logging and powerful script language



## Process vessel scales

Whether storage tank or outdoor silo, batching tank, mixer or reactor – Sartorius offers tailor-made equipment for almost every process vessel scale. In addition to rugged load cells, this also includes a complete range of accessories: from GL-certified mounting kits to state-of-the-art process transmitters. Everything fits together.

- From a few kilograms to well over a thousand tons
- 100% maintenance-free and highly reliable for the most accurate measurement values
- Unique safety provided by mounting kits and restrainers certified by Germanischer Lloyd
- Complete range of instrumentation including digital process transmitters, process indicators and batch and system controllers

# Complete Scales

Complete scales from Sartorius are compact, powerful packages. They combine simple handling and high performance. Select the suitable scale from many models, designs and capacity ranges. Comprehensive accessories

and options allow perfect adaptation to the installation location and application.

**Complete scales from Sartorius: On the scale, ready, away you go.**







## Midrics® Series

...easy-to-operate, rugged and easy-to-clean scales. The Midrics® series offers a complete range of platform sizes, resolutions and weighing capacities; the scales are also available on request in explosion-protected versions for Zones 2 and 22.

- Weighing capacities: 3 kg to 3 t
- Two indicators, 13 platform sizes
- Painted models: IP65 protection
- Stainless steel models: IP67 | IP68
- Resolutions for models verifiable for legal metrology, accuracy class  $\text{III}$  ( $1 \times 3000e$ ,  $2 \times 3000e$ ) or standard resolutions (15,000 d)



## Combics

...a coherent system of robust, flexible to configure industrial scales, painted or in stainless steel. Individual solutions due to a diversity of options and accessories.

- Weighing range: 3 kg to 3 t
- 13 platform dimensions
- 4 display and control units graduated according to the application
- New: Combics high resolution models:
- Weighing range: 16 – 300 kg (galvanized or powder coating)
- with monolithic system (up to 340000 d)



## Combics Food

...flexible to configure complete scales designed in accordance with the directives of the EHEDG and for the prevention of contamination in compliance with HACCP. The Combics Food version is specifically optimized for use in hygienically sensitive areas.

- Weighing range: 3 kg to 150 kg
- Resolution suitable for calibration in Class  $\text{III}$  (3000 e,  $2 \times +3000 e$ ) or not verifiable (15000d, 30000d)
- Load plate: stainless steel 1.4301 (V2A); optional: brushed or electropolished in stainless steel 1.4571 (V4A).
- Platform protection class IP68 (immersion proof) | IP69K (high pressure resistance)
- Indicator protection class IP67



## Signum® Series

...this series of compact industrial scales has exceptional performance features and is very easy to operate thanks to its wide choice of features and accessories. Signum® is extremely rugged-built and resistant, and perfectly adapts to any ambient conditions in industrial environments.

- Weighing capacities: 3 kg from 65 kg
- Can be used in Zones 2 and 22 hazardous areas
- Three groups of models, each offered in a choice of 3 application levels
- IP65 protection (basic version IP44) for all models
- Wide range of accessories, options and interfaces

# Scale Indicators and Weighing Terminals

The wide array of Sartorius indicators and terminals for weighing applications enable highly customer-specific process solutions. Field-proven application software and high accuracy make short work out of long-drawn-out routines – without any compromises in ergonomics or reliability. And with their variety of interfaces and option cards, advanced Sartorius indicators and terminals optimally

understand and communicate with other systems. Integrating Sartorius equipment into your process is pure pleasure – all gain and no pain.

**Weighing indicators and terminals from Sartorius: performance and easy operation – the totally flexible solution.**







## Midrics® Indicators

... easy-to-operate display and control units for universal applications – yet featuring an excellent price/performance ratio.

- Two different application levels
- Stainless steel housing
- IP65 with cable glands
- Backlit LCD; keys with positive click action and high-contrast labeling



## Combics Indicators

... high operating reliability; practical application programs; customizable printouts; additional, optionally retrofittable interfaces.

- Up to 9 application programs (e.g. counting, +/- checkweighing, ...)
- Standard RS-232C interface port
- EC type-approval certificate; with suitable load cells, verifiable for legal metrology
- Analogue bar graph, color-coded LEDs
- Stainless steel models can be optionally used in Zones 2 and 22

# Platforms

Sartorius platforms are the basis for a number of weighing tasks in industry. From the compact basic model for benchtop installation to rugged floor and pallet scales, from high-resolution digital platforms to pharmaceutical-grade flat-bed scales – you name it, the selection of the models and versions we offer is just as wide as the variety of our customers' processes.

**All platforms have one thing in common: their legendary Sartorius quality.**

**Platforms from Sartorius:  
Equipped for flexibility, ruggedness  
and practicality.**



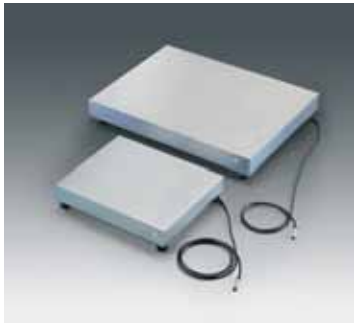




## Combiics Weighing Platforms

... from 0.1 g to 3,000 kg, these are a whole new generation of rugged and flexible industrial scales.

- Accuracy 3,000e, 2 × 3,000e, class **III**; 15,000d, 30,000d
- 13 different sizes
- IP65 | IP68 | IP69K protection
- Finish: painted or various stainless steel grades
- Accessories include drive-on ramps, pit frames
- Stainless steel models can optionally be operated in Zones 2 and 22



## IS Digital Platforms

... can be used from 0.001 g to 300 kg in automated processes. Verifiable in Classes **II** and **III**.

- Fast weighing; high resolution
- With built-in motorized calibration weight
- RS-485 or RS-232 C interface
- Rugged, industry-compatible design
- Can be used in Zones 1, 2, 21, 22 | FM CLASS I, DIV. 1



## IF | IF "PharmaLine" Flat-bed Scales

... with a weighing range from 5 g to 300 kg are especially easy to load. The PharmaLine version with a lift deck system is easy to clean to meet special hygiene requirements.

- 1 × 3,000e | 2 × 3,000e (for legal metrology); class **III**
- High resolution can be set
- Ultra-low profile design; IP68 protection
- Painted or stainless steel finish (also electropolished)
- Can be used in Zones 1, 2, 21, 22 | FM CLASS I, II, III DIV 1



## IU Pallet Scales

... from 10 g to 1,500 kg allow exceptionally flexible use.

- 1 × 3,000e | 2 × 3,000e (for legal metrology); class **III**
- High resolution can be set
- High protection rating: IP68
- Hot-galvanized or stainless steel version
- Can be used in Zones 1, 2, 21, 22



## Midrics® Platforms

... rugged and easy-to-clean platforms. The Midrics® series provides a complete range of platform sizes, resolutions and weighing capacities; on request, the platforms are also available in explosion-protected versions for Zones 2 and 22.

- Weighing capacities: 3 kg to 3 t
- 13 platform sizes
- Painted steel models: IP65 protection
- Stainless steel models: IP67 | IP68 protection
- Rugged construction; 4 adjustable leveling feet
- Resolutions for verifiable version for legal metrology; accuracy class **III** (1 × 3,000e, 2 × 3,000e) or standard resolution (15,000 d)

# Load Cells

The most advanced strain-gauge technology makes load cells from Sartorius so unique. Their high reliability and accuracy provide the solid basis for any application. High-grade materials and cutting-edge hermetic welding procedures enable an especially high grade of ingress protection to be implemented in these load cells and result in unequalled durability, even under the toughest industrial conditions of use.

A particularly wide selection of load cells enables you to find the right solution for nearly any industrial application – without making any trade-offs. And our extensive offer of accessories and mounting kits facilitate reliable integration.

**Load cells from Sartorius: absolutely industrial-grade. For perfect results right from the start.**







## Platform, Shear and Bending Beam Load Cells

...a wide range of load cells in various designs, specially made for use in platform and checkweighers as well as in tank and hopper scales..

- Highly corrosion-resistant
- Hermetically welded; IP67 and IP69K
- For legal metrology acc. to OIML R60
- Accuracy classes N, C3, C3MR
- Capacity range from 1 kg to 5 t



## Tension Load Cells

... manufactured from high-strength special or stainless steel. They are used in hybrid scales and for suspended vessels.

- Highly corrosion-resistant
- Hermetically welded, IP67 | 68
- For legal metrology acc. to OIML R60
- Accuracy classes N, C3, C6
- Capacity range from 60 kg to 5 t



## Compression Load Cells

... feature absolute accuracy in tank and hopper scales. They are made of highly corrosion-resistant stainless steel and are impervious to vibration.

- Accuracy classes L, D1, C3, C6
- Capacity range from 30 kg to 300 t
- Operating temperature range  
–30°C to +95°C
- IP68 | NEMA 6 protection
- Especially rugged and reliable



## Hygienic Design Load Cell

... the first weigh cell designed specifically for applications in the field of hygiene, in conjunction with users and research institutions and in accordance with the directives of the EHEDG.

- Capacity range  
1 t, 2 t, 4 t, 6 t, 10 t, 25 t, 50 t
- All stainless steel
- Hermetically welded; IP68  
(1.5 m | 10,000 h) and IP69K
- No eccentricity compensation thanks to optimized output signal
- Extremely high operating temperature range from –40°C to 95°C



## Mounting Kits

... particularly designed for use in tank and hopper weighing. They are matched to the specific load cells, and can be easily installed.

- High accuracy and safety
- Made of mild steel or stainless steel
- Capacity range from 30 kg to 300 t
- Rugged construction resistant to high lateral loads
- Maintenance-free constrainers and swivel eyes

# Process Transmitters

Sartorius process transmitters form the backbone of process automation. They combine especially high accuracy with exceptional reliability. The huge selection of designs and versions as well as numerous options and interfaces facilitate their integration into your process world.

And the fact that they are particularly easy to operate almost goes without saying.

**Process transmitters from Sartorius: exactly the right choice for reliable processes.**







## Analogue Process Transmitters

...designed for tank and hopper scales. Models with an intrinsically safe load cell interface can also be used for applications in hazardous areas.

- 0.1% accuracy
- IP65 field housing or 19" Euroformat
- Process control via 2 outputs; analogue output 4...20 mA
- Theoretical calibration via DIP switches



## Digital Process Transmitters

...modern field instrumentation for tank and hopper scales. Models with an intrinsically safe load cell interface can be used for applications in hazardous areas. Some models have an optional fieldbus interface.

- High accuracy, 3,000e, class III
- ModBus, Jbus, dust protocol, DDE driver serial
- Profibus DP, Interbus S, DeviceNet
- 3 inputs, 3 outputs; analogue output 4...20 mA
- Smart Calibration



## Compact Fieldbus Transmitters

...for especially easy connection to PLCs via Profibus. A DIN rail simplifies mounting in control panels.

- High accuracy 6,000e, class III
- Easy to configure using Windows® PC
- DIN rail mounting; IP20 protection
- 3 inputs and outputs; analogue output 4...20 mA
- Smart Calibration



## Ethernet Transmitters

...for fast connection of scales to PC systems. The use of standard browser technology enables easy configuration over Ethernet TCP/IP. Additional versions with Profibus, DeviceNet, Profinet and Ethernet/IP are available.

- Verifiable for legal metrology, 10,000e, accuracy class III
- DIN rail mounting and a stainless steel housing are available
- Standard integration, e.g., by IP address RJ45 connector
- Three inputs and outputs; analogue output ... 20 mA
- Smart Calibration



## Accessories

...and cable junction boxes for industrial, EX and legal metrological applications; installation cables for load cells, printers and interface cards.

- Additional interface cards for controllers
- Explosion-protected (EX) equipment, such as a remote display
- Cable junction boxes, protection ratings IP65 | 68 | 69K | NEMA 4x/6
- Installation cables for load cells

# Process Indicators

Sartorius process indicators are ideal supplements to conventional visualization in operation and control centers. They provide an immediate overview of the process status both on-site and installed in a control panel. Their compact design combines the most advanced A/D converter technology and an extensive choice of interfaces and option cards for seamless integration into higher-

level systems and controllers. These powerful display units enable your operating staff to reliably assess the particular process situation.

**Process indicators from Sartorius:**  
**Everything under control at a glance.**







## Digital Process Indicators

...are required for evaluating weighing signals. The display and keys provide easy operator guidance. On-site installation possible.

- 16-bit resolution
- 3 digital control inputs/outputs
- For panel installation; 85 to 250 V power supply
- IP65 protection (front)
- Numerous interfaces



## X3 Weighing Indicators

...for hopper, tank and truck scales. The use of standard browser technology enables easy configuration over Ethernet TCP/IP. Various options make it easy to integrate into available controllers.

- Verifiable for legal metrology; 10,000e, accuracy class  $\text{III}$
- Standard integration, e.g., by IP address RJ45 connector
- Smart Calibration
- Options: digital, analogue and serial I/O, DeviceNet,
- Profibus, Interbus, CC-Link
- Internal Alibi memory



## Weighing Controllers

...are ideal for high accuracy platform scales, weighbridges, fill workstations, batching applications & charge and discharge processes.

- EC type-approval certificate, 5,000e, class  $\text{III}$
- PLC function integrated
- Communication via fieldbus and Ethernet
- Housing for various mounting options, stainless steel, IP65
- Interface for external PC keyboard

# System Controllers

Sartorius system controllers bring together the functions of leading-edge process indicators and operating terminals with the functionality of a powerful controller. Our many years of experience in specific applications are incorporated in configured devices with built-in application software and thus enable you to make a fast start. Moreover, the user programmability according to IEC 61131 makes

these controllers highly flexible so that you can adapt them quickly to changes in your process conditions.

**System controllers from Sartorius: packed with process knowledge. Powerful in performance and flexible in adapting to your changing needs.**





## X4 Process Controllers, "X-Family"

... the right choice for weighing applications in all industrial processes. Versatile for control and communication.

- EC type-approval certificate; 6,000e, class (III)
- Integrated PLC function
- Communication through fieldbuses and Ethernet
- Front dimensions 192 × 96 mm
- Weight and 2-line text display



## X5 System Controllers, "X-Family"

... with a maximum of functionality set new standards for control and weighing electronics in the industrial area. The right choice for a variety of applications.

- Easy menu-guided operation
- Integrated PLC function
- Option cards already installed
- Pre-programmed applications
- Easily adaptable with PR1750
- Approved for ATEX Zones 2+22 and FM CLASS I, II, III, DIV. 2



## X6 System Controllers, "X-Family"

... offer the complete functionality of X5 system controllers with an additionally integrated keypad in the classic 19" housing.

- Easy menu-guided operation
- Integrated PLC function
- Option cards already installed
- Pre-programmed applications
- Easily adaptable with PR1750



## Combiics Pro

... the terminal for sophisticated weighing tasks.

- High-contrast, backlit color graphic display
- User-programmability
- HACCP-compliant hygienic design
- Type of protection: IP30 or IP69K
- Can also be installed in Ex-Zone 2, 22



## PowerTools

... are PC programs to facilitate getting the most out of your system controllers. These tools are supplied on CD and can be used with all "X-Family" controllers.

- DisplayIt: remote control by any Windows® PC
- RecoverIt: backs up all data incl. EARAM
- TranslatIt: translates all operating texts
- AccessIt: uploads all databases to a PC for editing
- FlashIt: easily loads software updates and programs



# Products for Hazardous Areas

Explosion-protected (EX) equipment from Sartorius takes the fear factor out of hazardous applications. The advanced, intrinsically safe circuit technology offers safety at the highest level – and all this practically without any limitations in accuracy or user-friendliness. The well-thought-out range of products is ideally matched, thus enabling the greatest possible compatibility of the individual products. ATEX-compliant and with international approval certificates.

And with the Verification of Intrinsic Safety diagrams and instructions already issued by Sartorius, you are immediately ready to comply with the requirement for Explosion Protection Documents, without having to write your own!

**EX weighing equipment from Sartorius: flexible, modular. Weighing equipment that is simply safe.**

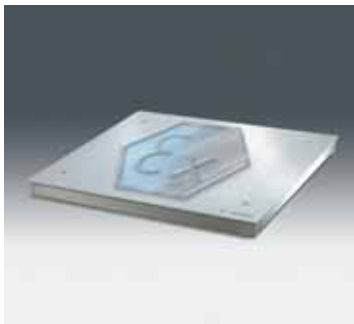




## Explosion-protected Load Cells

... have been specially designed and optimized for use in the typical process weighing applications in hazardous areas.

- Wide capacity range: up to 300 t
- Ex-certified for Zones 0, 1, 2, 20, 21 and 22, ATEX-compliant
- Entirely hermetic IP68 encapsulation
- Complete with blue connecting cable



## Explosion-protected Platforms

... are analogue stainless steel scales that can be used as floor, flat-bed and pallet scales and, with a monolithic weigh cell, as high-resolution platforms.

- ATEX-compliant; many with international approvals; for Zones 1, 21, 20, 2, 22 | CLASS I, DIV. 1, depending on model
- Model-dependent type approval for accuracy classes (II), (III), (III)
- High-resolution platforms monolithic cell, built-in calibration weight with data interface
- Verification of Intrinsic Safety diagrams and instructions included as standard



## Explosion-protected Complete Scales

... are adapted to meet different requirements for resolution and application levels.

- Intrinsically safe scales from 0.001 g to 300 kg
- Conform to ATEX, with international approval certificates for Zones 1 | 21 | FM: CLASS I DIV. 1
- Monolithic cell with internal built-in calibration weight or sophisticated strain-gauge technology
- Network-compatible
- Variety of power supply options (also battery)



## Explosion-protected Indicators

... are used with load cells and analogue and digital platforms. Variety of power supply options (also battery).

- Intrinsically safe and with ATEX and international Ex approvals for Zones 1, 21, 20, 2 and 22 | FM: CLASS I, II, III DIV. 1
- Integrated, powerful A/D converter and graphical display
- Can be used as legal measuring instruments
- Verification of Intrinsic Safety documents included as standard
- With filling application



## Peripherals for EX Weighing Equipment

... all are devices that integrate our EX weighing equipment into processes and enable transfer of data and I/O signals.

- Operating terminals
- Interface converters
- Data interfaces, intrinsically safe interfaces
- Various power supplies
- EX-certified roller conveyors



# Process Analytics – The Right Analyzer for Any Application

Measurements of the moisture and water content as well as the concentration of other raw materials are among the analyses most frequently performed in product development and in the manufacturing process.

These parameters have a decisive impact on the price, processability and the quality of raw materials and final products alike, whether these are foods, pharmaceuticals or feed. You can now directly optimize your

processes by continuously and accurately measuring these parameters thanks to Sartorius analyzers. For all industrial branches, Sartorius on-line, at-line and laboratory analyzers constitute the basis for efficient and transparent manufacturing processes. As a result, your investment in this equipment will pay for itself in no time.

**Process analytics with Sartorius:  
Fast, accurate and efficient.**







## PMD300 Series Online Microwave Resonance Systems

... specially designed for in process online analysis. The moisture content is determined in less than one second thanks to microwave resonance technology. A wide variety of sensors facilitate adaptation customization of the equipment to test and process conditions.

- Measuring range: 0.1 – 60% moisture
- Analysis time < 1 second
- Non-destructive measurement
- Connection options for PCs and PLCs
- Controls, documents and optimizes industrial processes and supports the IFS V.5 standard
- Moisture analysis independent of color, density and surface finish



## LMA300 Series Laboratory Microwave Resonance Moisture Analyzers

... designed for fast moisture analysis in the laboratory or at-line operation. The microwave resonance process offers the advantage of a particularly short measuring time of less than one second. Non-destructive measurement of all free-flowing bulk goods and viscous fluids, e.g. elutriation.

- Measuring range: 0.1 – 60% moisture
- Analysis time < 1 second
- Type of testing: Free-flowing bulk goods
- Operation via touchscreen color display or external PC keyboard
- Core and surface moisture are measured
- Density determination (optional)



## PMD500 Series NIR Online Systems and Laboratory Analyzers

... designed for monitoring mixing processes and completeness checks in real time, these rugged modular analyzers featuring NIR spectroscopy enable contact-free measurements of moisture and multiple components of liquid, pasty and solid substances in the lab and directly in a process.

- Measuring range 0.1 – 100% moisture
- Exact determination of the concentration of constituents, for ex.: fat or protein content, solvents, paint, etc.
- Analysis time < 1 second
- Non-destructive analysis
- Extensive software
- Automatic calibration function



## LMA200 Microwave Moisture Analyzer

...takes measurements in a fraction of the time required by other thermogravimetric processes. Major areas of application are laboratory analysis and at-line measurement. A cylindrically shaped test chamber and twin coupling of the microwave radiation allow homogeneous distribution of the radiation in the test. Hot and cold spots no longer arise.

- Measuring range: 8 – 100% moisture
- Analysis time: 40 – 120 seconds (dependent on time and moisture)
- Can be used for liquid and paste-like goods
- Easy two-key operation in routine function
- Integrated analytical weighing system with a 70 g weighing capacity and 0.1 mg weight measurement resolution

# Checkweighers

Sartorius checkweighers are known for their combination of the most advanced measurement technology, precision mechanical workmanship, electronics and machine engineering. Performing up to 600 weighing operations per minute, they are also prime examples of economy. Combining the highest accuracy and maximum throughput not only enables traceable logging, but also allows optimal sorting, classification, completeness checking and optimization of nominal quanti-

ties filled. And this really pays off. Despite all their performance capabilities, these checkweighers are especially easy to operate. Even under the toughest conditions of use, they accomplish their tasks reliably and accurately, day in and day out.

**Checkweighers from Sartorius: the highest accuracy, heavy-duty capacities, hygienic design. Everything is all under control.**





## Weighing in Motion (WM) Checkweighers

... constitute a flexible range of inexpensive dynamic checkweighers for bag filling and sealing machines, in-line completeness checks, determination of shipping data, and many more applications.

- Weighing capacities from 6 kg to 120 kg
- Dynamic accuracies of  
+/- 1 g to +/- 50 g
- For products up to  
1,800 x 900 mm (L x W)
- +/- checkweighing with  
product memories
- Options: interfaces, stainless steel finish,  
volumetric measurement



## SYNUS® Checkweighers

... modular-designed standard stainless steel checkweighers for average to high requirements. The characteristic housing contour ensures an equally compact and rugged design with maximum flexibility to accommodate later upgrades or changes in operating conditions.

- Weighing systems 1.0 kg, 2.0 kg, 5.0 kg  
or 7.0 kg; verifiable for legal metrology
- Throughput max. 300 products/min.
- Verifiable for legal metrology
- 3 control units: 6.4" TFT, 10.4" TFT or 15"  
TFT with touch screen
- Variety of protocol and networking  
possibilities
- Flexible data transfer and integration  
into Sartorius ProControl for Windows®



## CoSYNUS Combination Checkweighers and Metal Detectors

... the new model of the SYNUS® family combines the electronics of the Sartorius metal detector with those of our field-proven checkweighers. Using a single user interface, the operator can easily and clearly configure and control machines, and save time.

- Weighing systems 1.0 kg, 2.0 kg, 5.0 kg  
and 7.0 kg; verifiable for legal metrology
- 3 display and control units: 6.4" TFT,  
10.4" TFT or 15" TFT with touch screen
- Operation of the metal detector inte-  
grated into the SYNUS® user interface
- Variety of reporting and networking  
possibilities
- Flexible data transfer and integration  
into Sartorius ProControl for Windows®



## EWK 3000 Checkweighers

... these are premium stainless steel checkweighers that deliver maximum performance, particularly for use in production of foods, pharmaceuticals and toiletries. Special versions and software are available. They can optionally be combined with a metal detector.

- Weighing systems from 700 g to 60 kg
- Throughput max. 600 products/min.
- Verifiable for legal metrology
- 2 control units: 10.4" TFT or 15" TFT with  
touch screen
- Flexible data transfer through USB Print  
option and integration into Sartorius  
ProControl for Windows®
- Variety of protocol and networking  
possibilities



# Beltweighers

Sartorius beltweighers are veritable workhorses in their field. Featuring throughputs ranging from 100 kg to 25,000 t per hour, they enable reliable monitoring of conveyed bulk-material quantities, control loading and unloading, batching, weigh feeding and proportioning and blending, and generate constant flow rates. The application expertise of

Sartorius facilitates reliable handling even of materials with complex properties and accurate control of processes under difficult ambient conditions.

**Beltweighers from Sartorius: Rugged, reliable and accurate. Whatever your needs, we'll give you the control to help your profits flow.**





## EWM 1000 Weighing Electronic Units

...together with a Sartorius weighbridge, they constitute a beltweigher that is used in standard applications for precise measurement of quantities conveyed and for weigh feeding.

- Automatic zeroing
- Correction of the measuring accuracy by weighbridge test weight
- AISI 304 stainless steel housing
- Verifiable version for legal metrology



## EWM 609 Weighing Electronic Units

...are designed for use in conjunction with PLC and PC controllers in modern plants. The application-oriented software simplifies operation of the weighing electronics and allows easy zeroing and fast weighing calibration of the beltweigher.

- Loading or unloading of trucks | lorries, railcars | wagons and ships
- Batching for generation of constant flow rates per unit of time
- Weigh feeding, proportioning control of mixing ratios
- For use in legal metrology
- Data exchange at the Profibus level for PLC controllers



## Weighbridges

...are used in conjunction with Sartorius weighing electronic units for continuous monitoring of bulk-material quantities and throughput rates. An integrated test weight simplifies monitoring and calibration of the system.

- Rugged design
- Integrated strain-gauge load cell
- Single- and multiple roller versions
- Throughput performance from 100 kg/h up to 25,000 t/h
- Also available in stainless steel

# Metal Detectors

Sartorius metal detectors meet the highest safety requirements. They ensure that products are 100% free of metallic contaminants, and thus protect not only machines, but, above all, consumers. Even in aluminized packages, the advanced Sartorius technology incorporated by these detectors is capable of finding the smallest contaminants. This is consumer protection at maximum level. The

wide array of designs will enable you to find the best metal detector for your package sizes. Special conveying systems ensure optimal throughput and reliable detection without false alarms.

**Metal detectors from Sartorius: the most advanced measurement technology that is easy to use.**







## MDB Basic Metal Detectors

...offer reliable protection of machines in the most diverse industries. Guaranteed safety and high-quality search accuracy thanks to precisely matched system components – all this combined with easy installation.

- Single- and multiple-channel technology
- Ease of operation
- Internal function monitoring
- Rugged design



## MDE | MDP Economy | Premium Metal Detectors

...find metal particles and sort out contaminated products. A comprehensive offer of search coils, conveying and ejection| sorting options enables you to obtain tailor-made solutions. Automatic self-monitoring and quality assurance routines ensure continuous operational reliability.

- Assurance of product quality according to ISO 9001 and IFS
- DSP computing power and digital filters for the best possible protection against interference
- Interface for printer and SPCfWin quality assurance system
- Stainless steel housing (AISI304 | BS304) to meet the highest requirements on hygiene according to HACCP



## X-ray Inspection Systems

...check packed and unpacked bulk products for the widest variety of contamination including glass, metal, stones and other particles within the production process and safely locks out contaminated products.

- Detection of metal, glass, stones, bones, ceramic and certain plastic components (PVC)
- Completeness control, glass in glass applications
- Control of shape, volume and dimensions
- Weight control and detection of voids within the product



## OBSERVER™ Metal Detector

...detects magnetized iron and even stainless steel contaminants in aluminum-packaged products.

- Exclusively designed sensors based on magnetic field measuring technology
- Position-specific rejection by light-barrier synchronization
- Rejection monitoring optional
- Interactive prompts via four-line, backlit LCD



## CoSYNUS Combination Checkweighers and Metal Detectors

...the new model of the SYNUS® family combines the electronics of the Sartorius metal detector (MDP-S in the most compact design) with those of our field-proven checkweighers. Using a single user interface, the operator can easily and clearly configure and control machines, and save time.

- Weighing systems 1.0 kg, 2.0 kg, 5.0 kg and 7.0 kg; verifiable for legal metrology
- 3 display and control units: 6.4" TFT, 10.4" TFT or 15" TFT with touch screen
- Operation of the metal detector integrated into the SYNUS® user interface
- Variety of reporting and networking possibilities
- Flexible data transfer and integration into Sartorius ProControl for Windows®

# Average Weight Control of Prepackages and Quality Assurance

Sartorius systems and products for average weight control of prepackages and quality assurance are especially powerful, and their scope of features goes well beyond simple compliance with legal requirements. They are increasingly ensuring that processes are performed more economically and reliably, and enable traceability and recording of HACCP audits. Seamless integration into MES and

ERP systems combined with acquisition of additional quality-relevant parameters make them integral components of advanced process control.

**AWC and QA solutions from Sartorius: they focus on the process, keep quality under control, while completely documenting all steps for proof of compliance.**





### Combiics3 AWC Terminal

...featuring the user-friendly design and industry-compatible ruggedness of the Combiics system, is now available for average weight control of prepackages and attribute testing in networks.

- Compact solution for networking using Ethernet TCP/IP
- All stainless steel and IP67 protected
- For average weight control and attribute testing
- For the most diverse weighing capacities and resolutions
- Completely integrated in the extensive Combiics system



### Compact Stand-Alone SartoPac Basic System

...combines compact dimensions and unique user-friendly features in a high-quality system. Premium weighing technology with isoCAL | isoTEST for integration into quality systems.

- Average weight control | SPC | Pharmacopeia
- Weighing ranges: 230 g to 34 kg, protection up to IP65
- Verification scale intervals  $\geq 1$  mg (one solution for every product)
- Graphical display with soft keys; sophisticated evaluation
- 100 product memories (500 memories optional)



### Industrial PC – IPC

...particularly rugged, industry-compatible, compact version; allows the most sophisticated applications to be used directly in the processing area.

- Closed aluminum, or stainless steel housing
- Protection ratings up to IP65; compliant with HACCP
- INTEL processors,  $\geq 256$  MB RAM
- Color TFT touch screen with XGA or SVGA resolution: 8.4", 12.1" or 15"
- Windows® 2000 or Windows® XP Professional operating system



### Sartorius ProControl for Windows®

...modular scale-up system for recording, monitoring, evaluating and archiving all quantitative and qualitative product, process and environmental parameters.

- Average weight control | SPC | attribute testing | HACCP
- Ranges from stand-alone to network systems
- Solutions for every requirement
- Optimal central computer and workstation ergonomics
- The most advanced software platform guarantees a future-proof investment



# Software Solutions

Software solutions from Sartorius integrate the process knowledge of Sartorius into powerful software packages – ranging from manual recipe formulation software for stand-alone weighing stations to complex multi-user systems. And from recipe management on PCs to complex, multi-stage batch management systems for automated batching. All these solutions are supplemented by

numerous tools, drivers and server software – from an OPC server for especially simple connection to PCs to open database structures for exchange of data with inventory control systems.

**Software solutions from Sartorius: process knowledge at the touch of a key. Powerful and network-capable.**





## ProMix Manual Recipe Formulation

... the formulation system for manual batching by weighing raw materials of a recipe using high-resolution scales for stand-alone and multi-user systems. It increases process reliability and transparency.

- Easy to operate and clear guidance
- Campaign and batch weighing
- Calculation of the setpoints for active ingredients and auxiliary materials
- Can be validated according to GAMP | FDA 21CFR Part 11
- Logs and monitors raw material batches



## Automatic Batching Systems

... allow data management of raw materials, recipes or formulas and materials, and serve as central operating workstations for batching applications in automated processes.

- Easy-to-operate with Windows® user interface
- Control of up to 16 parallel batching processes
- Production and consumption data are generated and archived
- Open S88 interfaces for "X-Family" and PLC
- Choice of user languages



## Sartorius ProControl@Remote

...Software packages which facilitate seamless control and regulation via PC of any desired number of checkweighers and/or metal detectors in network operation.

## Sartorius ProControl@Inline

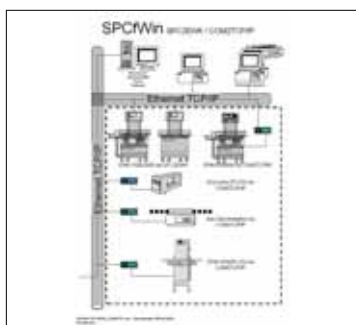
- Sartorius ProControl@Remote: individual remote control of checkweighers
- Sartorius ProControl@Inline: centralized data monitoring and data storage
- Efficient time and cost-saving monitoring
- Reliable data storage (SQL databases) and flexible evaluation
- Global access through Internet possible



## Communication Tools

... hardware and software for connecting and networking balances, scales, gauges and sensors.

- Verifiable scale driver with Alibi memory
- Data transfer to PC applications with control functions
- Fill level monitoring of tanks, hoppers, bioreactors and fermenters with central display on a PC
- OPC driver for the easiest integration of Sartorius scales
- DLL drivers



## Universal Networking of Serial Terminals

... to the Sartorius Com2TCP | IP; nearly all terminals and instruments with a serial port can be connected via Ethernet TCP | IP to the quality assurance system Sartorius ProControl for Windows® or to individual database systems.

- Connects all terminals and instruments with a serial port
- Moisture analyzer (e.g. Sartorius MA/MMA)
- Electronic thermometer, oxygen meters (important for HACCP/IFS)
- Checkweighers, metal detectors

## Expertise and reliable services – With us you get both!

Our service engineers are involved even during the project implementation phase in order to build their knowledge and add their practical experience.

The benefits show in optimum timing and short periods of downtime during commissioning, maintenance, repairs and the upgrading of plant.

- Maximum plant availability and optimum plant performance
- Minimum production downtime
- Quality assurance in accordance with current directives and standards
- Service from a single source

We offer a wide range of services: calibration, maintenance, training and service contracts with guaranteed response times represent just a small selection.

By way of preventive maintenance, for example, we considerably increase the performance and service life of your plant, problems are detected at an early stage or at best do not even arise. Thus we guarantee your investment and help to optimize your overall costs.







## Consulting

- Joint process analysis with the plant operator
- Consulting for process optimization, plant upgrading and modernization including preparation of specifications
- Preparation of realization concepts
- Cost estimates and implementation planning



## Commissioning

- Commissioning of your plant and equipment
- Monitoring during the initial production phase
- Introduction and instruction of operating personnel
- Updating of electrical circuit diagrams



## General On-Site Service

- Troubleshooting and fault analysis
- Adaptation to changed production circumstances
- Repairs following the impact of external factors such as lightning, storm damage and similar
- Installation and commissioning of replacement equipment



## Repairs, Replacement, Spare Parts Service

- Repair of defective electronic modules in our workshop
- Low cost replacement service for defective modules
- Original spare parts available worldwide, local consignment stock on request



## Service Contracts

- Preventive maintenance in accordance with pre-defined standards
- Fast response times from service engineers, round the clock when necessary, 365 days per year
- Guaranteed delivery lead times for spare parts