

## Tank & Hopper Weighing STAR Product Catalogue



## Hightech and Innovation at Sartorius



Sartorius Mechatronics is the leading supplier of high-duty industrial weighing components and systems. In the business unit tank & hopper Sartorius sells worldwide components in the field of heavy duty for outdoor silo-, mixer- and batching tank weighing machines. More than 50 years of experience solely dedicated to industrial process weighing applications have lead to unrivalled levels of sophistication in design and manufacturing of professional components. Our products and services have always been regarded as the best in the industry. Today they are a perfect synthesis of application experience, manufacturing know-how and give you the power of performance.

In virtually all industrial products and services from Sartorius have become an integral part of our customers processes: in cosmetics, pharmaceuticals, food & beverage but also in the glass and building materials industry as well as the petrochemical, paints, inks and adhesives. Whenever reliability and accuracy are of concern Sartorius and the strong partners in the Sartorius Group form a global alliance for even more process reliability.

For many years our specialists have been at the very forefront of technology and have defined today's standards in industrial weighing. Countless innovations like our unique „sputter“ technology, several inventions and international patents in special hightech processes, materials and alloys are the sound basis of our expertise and every product you buy from Sartorius.

In a unique combination of mechanics and electronics with our decades of application know how in industrial weighing and automation projects our products are designed to seamlessly blend into your process and give you direct access to it's qualities and benefits. This is why Sartorius products and services are already used for decades in many industries and processes.

Many years of continuous research and development in different fields go hand in hand: physics, electronics, informatics and mechanics. All combined in a unique alliance with only one goal: the design and manufacturing of the very best load cells and weighing electronics in the world.

Sophisticated weighing technology from Sartorius provides highest process reliability, maximum yield and unrivalled performance for your production and processes. Mechanics and electronics work in perfect harmony for perfect results every day, every year – even under harsh industrial conditions.

## Latest production technology and total process control for the highest quality and durability

At the very beginning of the design phase the inherent properties and quality of a load cell are already determined. It all starts with the very careful selection of special alloys, its specific treatment and the careful basic design of the measuring element. Decades of experience are required to gain the specific experience and know-how to build high quality load cells reliably by combining the specific properties of the used materials and processes with a particular design. Our in-house CNC precision machining unites highest degrees of automation with maximum care in handling.

Sartorius Mechatronics is one of the pioneers in strain gauge technology. As one of the few manufacturers worldwide we develop, design and manufacture our own strain gauges using unique high-tech materials derived from aerospace and military applications. This not only gives us the widest possible influence on our products but has also led to a degree of perfection, reliability and control unknown from any other supplier.

We help and assist in any way possible even a long time after your initial purchase. With a wide range of spare parts, repair and quick exchange services accompanied by extensive offerings in calibration and preventative maintenance.

Your individual solution is at the very heart of all our efforts at Sartorius. Our experts in sales and service are there to help with all their application and process know-how for your benefit.

We at Sartorius provide more than just products. We are at your disposal in providing consultancy during specification and planning right through start-up, commissioning and the day-to-day operation of your plant.



## Load Cells

	Type	Application	Accuracy	Capacity Range	Operating Temp.	Ingress Protect.	Approvals
<b>PR 6201</b> 	Compression-Load Cell	Tank and Hopper Scales, Batching Systems	L, D1, C3, C4, C5, C6 OIML NTEP, NSC	500 kg...520 t	-30°C...+95°C optional 120°C/ 150°C	IP68 IP69K NEMA 6	Atex Zone 0, 1, 2, 20, 21, 22 FM & CSA GOST
<b>PR 6202</b> 	Compression-Load Cell	Hygienic Tank and Hopper Scales for Pharma and Food Industries	C1, C3, C4 OIML	1 t...50 t	-40°C...+95°C	IP68 IP69K NEMA 6	Atex Zone 0, 1, 2, 22 FM & CSA EHEDG GOST
<b>PR 6211</b> 	Compression-Load Cell	Tank and Hopper Scales, Simple Batching Systems	D1 OIML	30 kg...300 kg 500 kg...10t	-30°C...+95°C optional 180°C	IP68 IP69K NEMA 6	Atex Zone 0, 1, 2, 20, 21, 22 FM & CSA GOST
<b>PR 6241</b> 	Compression-Load Cell	Tank and Hopper Scales, Precision Batching Systems	D1, C3, C6 OIML NTEP	100 kg... 5 t	-30°C...+95°C	IP68 IP69K NEMA 6	Atex Zone 0, 1, 2, 20, 21, 22 FM & CSA GOST
<b>PR 6251</b> 	Level Sensor	„Level-by-weight“	L	500 kg...16 t	-30°C...+95°C	IP68 IP69K NEMA 6	Atex Zone 1, 2, 20, 21, 22 FM & CSA GOST
<b>PR 6246</b> 	Tension Load Cell	Tank and Hopper Scales, Precision Batching Systems, Hybrid Scales	D1, C3, C6 OIML NTEP	100 kg...3 t	-30°C...+95°C	IP68 IP69K NEMA 6	Atex Zone 0, 1, 2, 20, 21, 22 FM & CSA GOST
<b>PR 6221</b> 	Truck Scale Load Cell	Truck Scales	C3, C4, C5 OIML NSC	20 t...75 t	-10°C...+55°C	IP68 IP69K NEMA 6	Atex Zone 0, 1, 2, 20, 21, 22 FM & CSA GOST
<b>PR 6207</b> 	Bending Beam Load Cell	Tank and Hopper Scales, Precision Batching Systems, Hybrid Scales	C3, OIML	10 kg...200 kg	-30°C...+70°C	IP67	Atex Zone 2, 22 GOST

Test conditions for: IP68 1.5 m water column/ 10,000h  
IP69K water under high pressure/steam cleaner



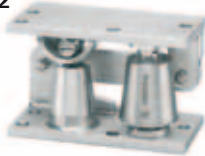
## Mounting Kits

**PR 6001**



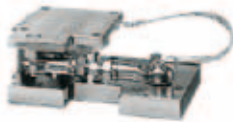
- Easy to mount
- Complete solution for all installation problems
- Standard dimensions for different versions
- Full stainless steel version available
- High permissible side forces for continuous operation
- Special swivel bearings (maintenance free)

**PR 6002**



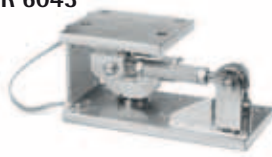
- Designed according to EHEDG requirements
- Especially for Food and Pharma applications
- Full stainless steel Version
- Special swivel bearings (maintenance free)
- Dummy function for fast installations available

**PR 6011**



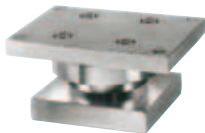
- Easy and fast installation
- Proven mounting kits for vessels
- Prepared for the installation of a lift-off-protection
- Full stainless steel version available
- Completely maintenance free, incl. constrainer
- Compact design

**PR 6043**



- Easy and fast installation due to dummy included
- Proven mounting kits for vessels and platforms
- Prepared for the installation of a lift-off-protection
- Full stainless steel version available
- Completely maintenance free, incl. constrainer
- Compact design

**PR 6051**



- Easy and fast installation
- Extreme low profile
- Ideal for retrofitting
- To be used in connection with pirots

**PR 6046**



- Easy and fast installation
- Maintenance free bearings for best performance
- High capacity and safety
- Completely maintenance free

**PR 6021/01N**



- Easy and fast installation
- Easy to adjust
- Fixed top load disc
- High resistance against wear and tear

**PR 6007**



- Easy and fast installation
- Ideally suited for small vessels
- Mechanically protected bellows
- Integrated overload protection

## Accessories



### Cable Junction Boxes for Industrial Applications

#### PR 6130/04N

- Aluminium Cable Junction Box
- up to 4 Load Cells
- IP 67

#### PR 6130/08N

- Polycarbonate Cable Junction Box
- up to 8 Load Cells
- IP 65

#### PR 6130/64Sa

- Stainless Steel Cable Junction Box
- up to 4 Load Cells
- IP 68/ IP 69K
- ATEX

#### PR 6130/65S

- Stainless Steel Cable Junction Box
- small dimensions
- up to 4 Load Cells
- IP 68/ IP 69K
- ATEX

#### PR 6130/68S

- Stainless Steel Cable Junction Box
- up to 8 Load Cells
- IP 68/ IP 69K
- ATEX

### Cable Junction Boxes for Truck Applications with PR6221 incl. Lightning protection

#### PR 6021/08N

- Polycarbonate Cable Junction Box
- up to 8 Load Cells
- IP 65

#### PR 6021/68S

- Stainless Steel Cable Junction Box
- up to 8 Load Cells
- IP 68/ IP 69K
- ATEX

### Connection Cable

#### PR 6135 / PR 6136

- Signal transmission over long distances
- Very good chemical resistance
- Double screened
- Version with reinforced coating and for Ex available

# Transmitter

PR 1590/PR 1591



Type	Application	Approvals	Housing
Analogue Transmitter 0,1% (0,05%)	Tank and Hopper Scales	CENELEC	Euroformat 19", Fieldhousing IP 65, Aluminium
In-/Outputs	Interfaces	Fieldbus	Remarks
Digital - / 2 Analogue - / 1 (0/4-20 mA, 0/2-10V)	-	-	Intrinsically Safe Load Cell Interface, Ex (option), theoretical calibration

PR 1710/PR 1711



Type	Application	Approvals	Housing
Digital Transmitter	High Accuracy Tank and Hopper Scales	W&M approval for 3000e, class III, ATEX Zone 2	Euroformat 19", Fieldhousing IP 65, Aluminium
In-/Outputs	Interfaces	Fieldbus	Remarks
Digital 3 / 3 Analogue - / 1 (0/4-20 mA)	RS232/422/485	-	Intrinsically Safe Load Cell Interface, Ex (option), SmartCalibration

PR 5230



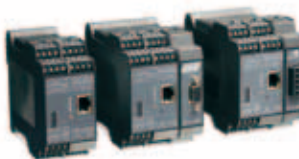
Type	Application	Approvals	Housing
Process Transmitter in field housing	Tank Et Hopper Scales connected to PC and Control Systems	W&M approval for 10,000e, class III ATEX Zone 2/22	electropolished stainless steel IP 66
In-/Outputs	Interfaces	Fieldbus	Remarks
Digital 3 / 3 Analogue - / 1 (0/4-20 mA)	Ethernet TCP/IP, Modbus TCP, RS232, RS422/485	Profibus-DP, DeviceNet, Interbus-S, ProfiNet, Ethernet/IP	SmartCalibration Internal Error Memory LCD Display, configurable

PR 5210




Type	Application	Approvals	Housing
Process Transmitter	Integrated Scales for Process Control Systems	W&M approval for 6000e, class III	Rail mounting, IP 20
In-/Outputs	Interfaces	Fieldbus	Remarks
Digital 3 / 3 Analogue - / 1 (0/4-20 mA)	RS232 for Config. RS422/485	Profibus-DP	SmartCalibration

PR 5220



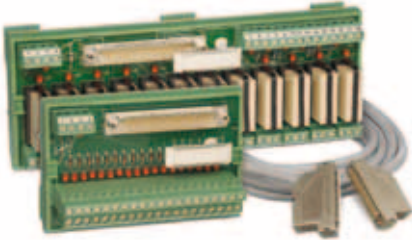
Type	Application	Approvals	Housing
Ethernet Transmitter	Tank Et Hopper Scales connected to PC and Control Systems	W&M approval for 10000e, class III	Rail mounting, IP 20
In-/Outputs	Interfaces	Fieldbus	Remarks
Digital 3 / 3 Analogue - / 1 (0/4-20 mA)	Ethernet TCP/IP Modbus TCP RS422/485	Versions with Profibus-DP, Device Net, Ethernet/IP, ProfiNet	SmartCalibration

## Indicators / Controllers

<b>X1</b> 	<b>Type</b> Basic Process Indicator	<b>Application</b> Truck Scales, Level Control, Tank and Hopper Scales	<b>Approvals</b> CE approval	<b>Housing</b> Front Panel Housing, Aluminium, Front IP65
	<b>In-/Outputs</b> Digital Relais - / 2 Analogue - / 1	<b>Interfaces</b> RS232, RS485	<b>Fieldbus</b> -	<b>Remarks</b> -
<b>X3</b> 	<b>Type</b> Process Indicator	<b>Application</b> Tank & Hopper Scales connected to PC and Control System	<b>Approvals</b> W&M approval for 10000e, class III ATEX Zone 2/22	<b>Housing</b> Front Panel Housing, Aluminium, Front IP65
	<b>In-/Outputs</b> Digital 3 / 3 incl. Digital 12 / 24 optional Analogue 4 / 1 BCD	<b>Interfaces</b> Ethernet TCP/IP Modbus TCP RS232/422/485 DDE-/ OPC Server	<b>Fieldbus</b> Profibus-DP, Interbus-S, DeviceNet, Ethernet/IP, ProfiNet, CC-Link	<b>Remarks</b> SmartCalibration Configuration via Front or Configuration Tool
<b>X4</b> 	<b>Type</b> Process Controller	<b>Application</b> PRO, IBC, FILL, BATCH, FLOW, PHASE etc.	<b>Approvals</b> W&M approval for 6000e, class III	<b>Housing</b> Front Panel Housing, Aluminium, Front IP65
	<b>In-/Outputs</b> Digital 12 / 24 internal Digital 256 external Analogue 4 / 2	<b>Interfaces</b> RS232/422/485 Ethernet DDE- / OPC Server	<b>Fieldbus</b> Profibus-DP, Interbus-S, DeviceNet, Ethernet/IP, ProfiNet, CC-Link	<b>Remarks</b> SmartCalibration, programmable, various application- software
<b>X5/PR 1713</b> 	<b>Type</b> System Controller	<b>Application</b> PRO, IBC, FILL, BATCH, FLOW, PHASE, TRUCK, LOG, BULK etc.	<b>Approvals</b> W&M approval for 5000e, class III, ATEX Zone 2/22, FM	<b>Housing</b> Desk, Wall and Front Panel Housing, Stainless Steel, IP 65
	<b>In-/Outputs</b> Digital 18 / 24 internal Digital 256 external Analogue 4 / 2	<b>Interfaces</b> RS232/422/485 Ethernet DDE- / OPC Server	<b>Fieldbus</b> Profibus-DP, Interbus-S, DeviceNet	<b>Remarks</b> SmartCalibration, programmable, various application-software
<b>X6</b> 	<b>Type</b> System Weighing Controller	<b>Application</b> PRO, IBC, FILL, BATCH, FLOW, PHASE, TRUCK, LOG, BULK etc.	<b>Approvals</b> W&M approval for 5000e, class III	<b>Housing</b> 19" Housing, Front IP65
	<b>In-/Outputs</b> Digital 12 / 24 internal Digital 256 external Analogue 4 / 2	<b>Interfaces</b> RS232/422/485 Ethernet DDE- / OPC Server	<b>Fieldbus</b> Profibus-DP, Interbus-S, DeviceNet	<b>Remarks</b> SmartCalibration, programmable, various application-software

## Accessories

### PR 1623



- **Easy process integration for**
  - X4 Process Controller with digital I/O-modul PR 5510/12
  - X6 System Weighing Controller with digital I/O-modul PR 5710/12
  - PR 1613 Weighing Indicator
- Direct switching of actuators with powerful relays
- Status indication with LED's

### PR 1625/PR 1626



- **Load cell interface PR 1626/60:**
  - Intrinsically safe interface for connection of load cells in hazardous areas
  - Max. 8 load cells of 650  $\Omega$
- Approved for W&M applications (OIML R76, class III), 3000e
- **Data interface PR 1625/60:**
  - Intrinsically safe interface for connection of remote displays in hazardous areas
  - Bidirectional serial interface to and 2 digital inputs from the hazardous area
- **Power supply 24 VDC PR 1624/00:**
  - 24 VDC output
  - Supply: 110/230 VAC
  - LED operating signal

### Ex-Terminals



- Verifiable remote display (slave) and terminal for scale operation
- ATEX versions for operation inside hazardous areas
- Robust metal housing with IP65 or panel installation with front plate in IP65
- **PR 5110**
  - Remote Display for transfer of weighing data for Connection of T&H electronic devices and Combiics Pro
- **PR 5610/05**
  - Terminal for installation in hazardous area for connection of X-Family system controllers

### Options



For many products from Sartorius Mechatronics a wide range of options is available. If the requirements or the process changes this allows an easy extension or modification at a later stage.

- Various field bus options (Profibus-DP, DeviceNet, Interbus-S, CC-Link, ...)
- Ethernet TCP/IP
- Serial interfaces (RS 232, RS 422, 485, TTY...)
- Analogue Interfaces (0 und 4-20mA, 0-10V)
- Digital I/O Extension (Relais, opto-coupler)
- Profi Net, Ethernet/IP



# Software

## PR 1750



Graphical development tool for programming of X-Family controllers and Combics Pro terminal:

- Fully graphical programming that even beginners can use
- High-performance simulation features for testing operation and input/output
- Program code generated automatically
- IEC 61131-3-compliant programming
- Powerful debug system with online debugging and runtime monitoring
- Graphical programming languages: Function Block Diagram (FBD) and Ladder Diagram (LD)
- For implementing system-specific solutions
- Powerful project documentation tools

## ProBatch+



- Open batch system for X-Family and other PLC controllers, such as Siemens S7
- Simple, user-friendly operation with clear process information
- Material management with stock monitoring and tracking
- Integrated script language for customer specific process requirements
- Connection of controllers in accordance with Batch Standard ANSI/ISA S88.01 via OPC
- Production and batch reports in addition to consumption quantity lists

## Power Tools



The complete package of programs for the System controllers of the X-Family and Combics Pro:

- Software updates at any time: the process functionality is always state-of-the-art
- Remote control of the weighing system from any Windows PC
- Easy translation Tool for the operation language
- Backup and restore all data and parameters from the instrument
- Upload and edit of all tables in the controller and download them back into the controller
- Sartorius "Nice Label Express" for easy creation of reports and labels

## Our Services for best performance

Dear Customer,  
for your benefit we have re-defined our Service products. Naturally this still includes the classical after sales activities normally part of a Service organisation. To supplement this, we have analysed a wide range of production environments and customer requirements. The result was the identification of additional service products, which we have now included in our portfolio. Through the possibility to select the products individually or in any combination, we can offer various Service packages tailored to meet your specific requirements.

Our Service to you does not only start after the sales phase, it is also focused on qualified support in the phase of customer decision-making. This is achieved by close co-operation with the sales organisation at the appropriate point in time. During the commissioning phase and subsequently throughout the operational life time of the system, qualified consultancy on often complex issues is a fundamental component of our concept. This allows the recognition of potential problems at an early stage or ideally, totally avoid the occurrence of these problems.

This continuous consultancy ensures peace of mind during all the phases of operation. Already during commissioning, the benefits of the thorough preparation become evident. This begins with the right selection of equipment and ultimately ensures the achievement of the planned time schedule.

Our Service spectrum is wide: calibration, repair, training and service contracts are only a few examples. For instance, preventive maintenance will increase the efficiency and lifetime of your equipment and systems – always with the goal of optimizing the plant efficiency and total costs in line with your requirements.

As part of a global company – the Sartorius Group – our flexible and competent international service organisation is always at your disposal.

Please contact us! We will be happy to help you.

Your Service Team



## We're ready to help you wherever you need us

Under the umbrella of the Sartorius Group, the business area Process Weighing & Control is represented in a global network – for sales and distribution, technical service and research.

Each location combines the expert knowledge in process weighing, quality assurance and metal detection into one organisation under the Sartorius brand. This combination makes us an even more capable partner in optimising your processes.

Our goal is to offer you not only tailored products, but also increasingly process- and value-added consultation services and solutions. Whether IFS, ATEX or GAMP, we have expert knowledge of the latest standards and can offer you high-quality products and service packages that meet the legal regulations

applicable to your systems – from weighing platforms and food scales to controllers and software solutions.

Summarized: we combine our expertise as process specialists, going by the motto: "Weigh|Detect|Control".

## Worldwide service from a single source

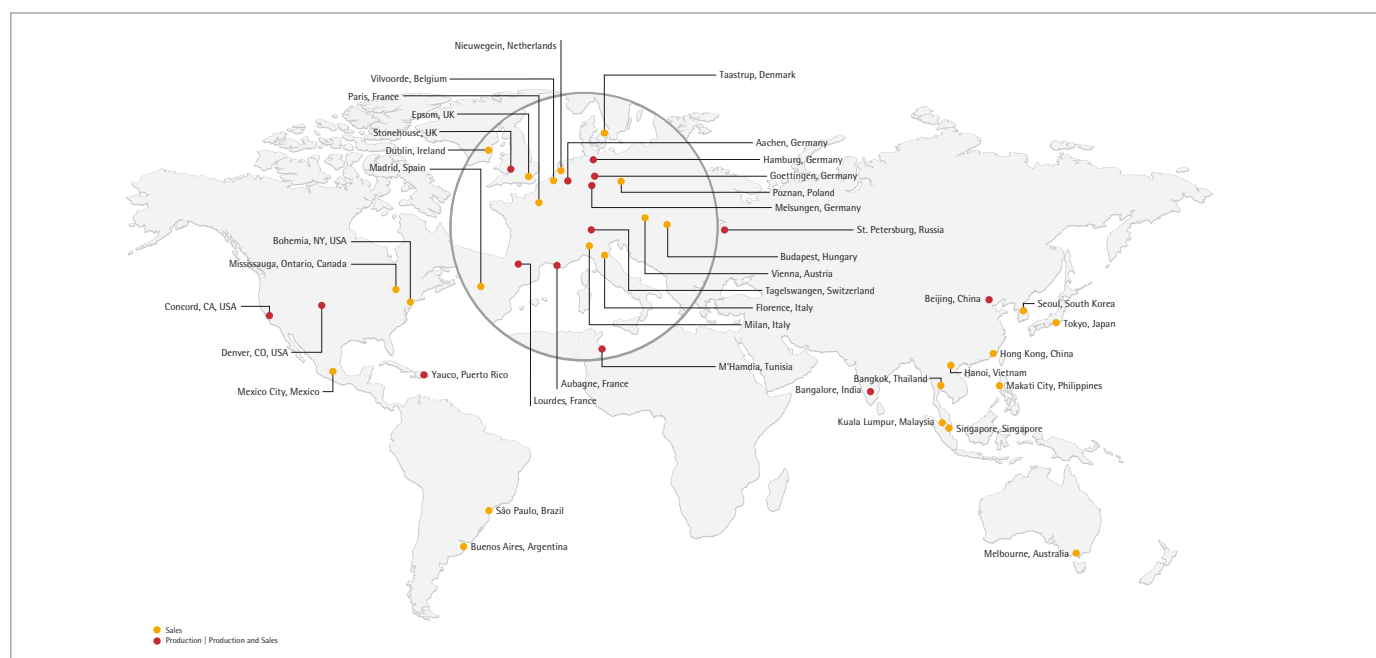
To us, service means:

- Providing you with expert advice right from the start concerning applications in weighing and process engineering
- GLP/GMP-compliant equipment qualification – IQ/OQ/PQ

- Logging the weighing results and certifying your weighing equipment
- Accrediting your equipment concerning its uncertainty of measurement according to the German Calibration Service (DKD); this service extends from microbalances all the way to 3-t platform scales

- Offering first-rate repair, exchange and spare parts services
- Providing online services
- Conducting product training courses

- Preparing your weighing equipment for initial and subsequent verification for use in legal metrology
- Offering service and maintenance agreements



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