Competence for safety
For flexible weighing in hazardous areas
A tradition of safety

Over many years, Sartorius has built up a wealth of experience in designing and manufacturing explosion-protected weighing equipment. This experience goes back to products ranging from the first explosion-proof mechanical product solutions to the world’s first pressure-encapsulated electronic balance introduced in 1979, all the way to the first intrinsically safe scale that debuted in 1985. Today, Sartorius develops electronic and non-electrical equipment to meet the market requirements in compliance with the provisions governing the most diverse types of explosion protection. Sartorius was one of the first German companies to have passed the rigorous quality assurance system audit performed by the demanding German National Institute of Metrology, the PTB, in compliance with the European ATEX Directive. Already in 1997, Sartorius was authorized to put its ATEX-compliant weighing equipment on the market. Since then, we have been offering our customers a continuously growing range of explosion-protected weighing equipment, which meets automated production needs besides the requirements of the advanced types of explosion protection. As a globally operating group, we also offer EX weighing equipment internationally certified, for example, for compliance with FM (USA), CSA (Canada) and other national standards, such as those of Japan and China.

Versatile products and verified safety

Despite the restrictive safety requirements in hazardous areas, explosion-protected weighing equipment from Sartorius lets you use all the advantages of cutting-edge scales:
- Best accuracy and filter algorithms for reliable weighing data
- User-friendliness for safe work sequences
- Advanced monolithic, 21st-century weighing technology for resolutions of up to 600,000 display digits
- GMP-compliant recording|printing
- Wide variety of interfaces
- Rugged design

Considering all these features, Sartorius offers an array of products that enable you to easily implement the widest variety of complex weighing solutions. In this brochure, you will find examples of equipment combinations with Sartorius EX products for use in various hazardous areas.

The ATEX Directive stipulates that the operator of equipment in a hazardous area must supply written conformity assessment that verifies the safety of the equipment assembly. This must include the individual characteristic values of the equipment configuration including all connecting cables. Explosion risk assessment also covers non-electrical equipment (e.g., roller conveyors).

Potentially explosive atmosphere

If only Sartorius components are used in your specific weighing equipment assembly, we have already tested their compatibility and describe this in the Verification of Intrinsic Safety diagrams that are automatically supplied with Sartorius explosion-protected equipment. These diagrams consider all combinations described for the approved equipment so that you can use the appropriate set of Verification of Intrinsic Safety diagrams and instructions as part of your own explosion protection documents.

You will also find this extra Sartorius “Verification of Intrinsic Safety” service useful if you combine Sartorius components with those of other manufacturers (e.g., load cells) or need to select the matching valves for a batching system. For every externally accessible intrinsically safe circuit, Sartorius Verification of Intrinsic Safety diagrams indicate the maximum permissible parameters, such as voltage, current, power, capacitance and inductance.

Advantage: you save time and money in preparing new explosion safety documents!

<table>
<thead>
<tr>
<th>Potentially explosive atmosphere</th>
<th>Zone classification for use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety measure (category acc. to Directive 94/9/EC (ATEX))</td>
<td>Risk present continuously or for long periods or frequently</td>
</tr>
<tr>
<td>IEC</td>
<td>CENELEC</td>
</tr>
<tr>
<td>US</td>
<td>NEC 505</td>
</tr>
</tbody>
</table>

Category 2 equipment also offers a considerably higher level of protection in category 3 as well.
Examples of approval markings

For use in an explosive gas atmosphere: II 2 G EEx ib IIC T4
For use in an explosive dust atmosphere: II 1 D T90°C IP64

Max. surface temperature
(specified for equipment to be used in potentially explosive dust atmospheres)
- Max. surface temperature that can be reached by the equipment under fault conditions (normal operation for cat. 3 equipment) in a potentially explosive atmosphere. It is also possible to indicate the temperature range.

IP codes
(specified only for equipment to be used in potentially explosive dust atmospheres)
1st number = Protection against contact and ingress of solid foreign bodies
5: Protection against dust deposits (dust-protected)
6: Protection against ingress of dust (dust-tight)
2nd number = Protection against ingress of water
0: No protection
1: Vertically dripping water
2: Drops falling on the equipment when tilted at an angle of 15°
3: Sprayed water
4: Splashed water
5: Water jets
6: Powerful water jets
7: Temporary immersion
8: Continuous immersion

Dusts from natural products|dusts from chemical-technical products|metal ducts

Types of ignition protection
(selection used in Sartorius equipment)
q: Powder filling
d: Flameproof enclosure
e: Increased safety
ia: Intrinsic safety (required for zone 0)
ib: Intrinsic safety (sufficient for zones 1 and 2)
m: Encapsulation
n: Normal operation under normal conditions (only for zones 2 and 22)
nA: Non-sparking
nC: Non-incendive or hermetically sealed enclosure
nR: Restricted breathing enclosure
nL: Energy limited

Temperature classes
Max. surface temperature of the equipment* of gas
T1: 450°C T1: > 450°C
T2: 300°C T2: > 300°C
T3: 200°C T3: > 200°C
T4: 135°C T4: > 135°C
T5: 100°C T5: > 100°C
T6: 85°C T6: > 85°C

Explosion group
(specified only for equipment to be used in explosive gas atmospheres)
IIA: Propane (T1), benzene (T3)
IIB: Ethylene (T2), municipal gas supply (T1)
IIC: The most dangerous group (e.g., hydrogen (T1), acetylene (T2))

* In the North American Standard NEC 500, these temperatures are subdivided according to T2A, T2B, etc.
Weighing equipment for use in zone 1 (gases)

**Zone 1 (according to CENELEC, IEC)**
Division of hazardous areas according to the Directive 1999/92/EC, ATEX 137:

A place in which an explosive atmosphere consisting of a mixture with air or flammable substances in the form of gas, vapor or mist is likely to occur in normal operation occasionally.

This zone requires equipment group 2G (1G is also possible).

**Factory series:**
- **Compact FC-X** and **FCA-X** precision scales
  - Weighing capacity from 0.001 g to 300 kg, also factory-verified for legal metrology
  - Type of ignition protection: Intrinsic safe, ATEX: II 2 G Ex ib IIC T4
  - With monolithic weigh cell (metrolological advantages; build-in, motorized calibration weight, advantageous for use in quality systems)
  - RS-232C data interface standard (other optional data interfaces can be installed)
  - Combina<e111> application programs and product data memory
  - Backlit graphical display for menu-driven prompts in plain text (industrial-grade plastic or stainless steel)
  - Can be networked with up to 8 client devices

**Factory series:** **FCT-X indicator**
- With build-in A/D converter for analog platforms or load cells up to 120 t
- Type of ignition protection: Intrinsically safe, ATEX: II 2 GD Ex ib IIC T4
- Data interface standard (other optional data interfaces can be installed)
- Combina<e111> application programs and product data memory
- Backlit graphical display for menu-driven prompts in plain text for configuration of the A/D converter
- Can be networked with up to 8 client devices

**Factory series:** **IS-X digital precision platforms**
- Weighing capacity from 0.001 g to 300 kg, also factory-verified for legal metrology
- Type of ignition protection: intrinsically safe, ATEX: II 2 G Ex ib IIC T4, from 16 kg and up: II 2G 1D Ex ib IIC T4 1T35°C
- With monolithic weigh cell (metrolological advantages; built-in, motorized calibration weight, advantageous for use in quality systems)
- RS-232C data interface standard (other optional data interfaces can be installed)
- For use as a digital, explosion-protected "weighing sensor" connected to PLCs, or a max. of 2 platforms can be connected to the Combics indicator (in a hazardous area) or to a series X5 controller (in the non-hazardous area and connected via converter/barrier)
- Can be networked with up to 8 client devices

**Economy**|**PMA series, EB-X,**
|**or Economy "stainless steel", EC1XS**
- Economy (aluminum die-cast):
  - Weighing capacity from 0.1 g to 150 kg
- Economy (stainless steel): capacity from 0.1 g to 3 t, also verifiable for legal metrology
- Type of ignition protection (aluminum die-cast enclosure): intrinsically safe, ATEX: II 2 G Ex ib IIC T4
- Type of ignition protection (stainless steel):
  - Intrinsically safe, ATEX: II 2 GD Ex ib IIB T4 T155°C
  - RS-232C data interface standard (optional RS-422 data interface)

* Known as the Express series in North America

**Combics series:** **CIXS3 indicator**
- With build-in A/D converter for analog platforms or load cells up to 32 t; optional interface for digital platform
- Type of ignition protection: Intra<e111> safe, ATEX: II 2G 1D Ex ib IIC T4 T135°C
- Stainless steel housing with cable glands
- 2 interface ports (1 RS-232C/RS-422)
- RS-485 configurable by software) standard
- 2 application kits for automatic single-component filling up to a target weight
- Can be networked with up to 8 client devices

**Combics series:** **CAPXS platforms**
- Weighing capacity from 0.1 g to 3 t, also factory-verified for legal metrology
- Type of ignition protection: intrinsically safe, ATEX: II 2 G Ex ib IIC T4 T135°C
- 11 different sizes
- Low-profile, stainless steel design
- Other materials optional for the load plate, underframe, and lift-deck system

**PR62..|6x load cells**
- Wide capacity range up to 300 t
- Type of ignition protection: intrinsically safe, ATEX: II 1G (also 2G depending on the type)
- 1D Ex ib IIC T4 T85°C IP65
- Completely hermetically encapsulated, IP68
- Various designs, mounting kits and accessories
- Tension and bending beam load cells made of special high-strength steel or stainless steel for platform, hybrid, tank and hopper scales and suspended vessels
- Compression load cells made of highly corrosion-resistant stainless steel for precision weighing in tank, vessel and silo scales
- PanCake level cells, ultra-low profile design (25|35 mm), for level-by-weight measurements of liquids and bulk solids
- Specialty load cells for trucks and freight cars

**IFXS flat-bed scales**
- Weighing capacity from 0.1 g to 3 t, also factory-verified for legal metrology (1 × 3000e|2 × 3000e; class III)
- Type of ignition protection: intrinsically safe, ATEX: II 2 G Ex ib IIC T4 T135°C
- High-grade material and outstanding workmanship – design ideal for use in the pharmaceutical industry
- Easy to clean thanks to load plate lifting mechanism
- Exceptionally low-profile design for especially easy loading
- High protection rating: IP68

**IUXS pallet scales**
- Weighing capacity from 0.1 g to 1.5 t, also factory-verified for legal metrology (1 × 3000e|2 × 3000e; class III)
- Type of ignition protection: intrinsically safe, ATEX: II 2G 1D Ex ib IIC T4 T135°C
- High protection rating: IP68
Configurations with load cells in Zone 1

Hazardous area

- Load cells, e.g., PR62...
- Combsic EX platforms or IS-X precision platforms
- Explosion-protected junction box

Non-hazardous area

- Interface converter or Zener barrier
- EX transmitter
- PLC or PC

Configurations with a controller

Hazardous area

- Combsic EX platform
- IFXS4 flat-bed scale
- IUXS4 pallet scale
- Load cells, e.g., PR 62...

Non-hazardous area

- EX terminal, PRS160
- Controller, e.g., PR17... X4, X5, X6
- Intrinsically safe interface
- Barrier
Configurations with analog explosion-protected (EX) platforms in zone 1

- Combics EX platform, CAPSX
- IFXS4 flat-bed sale
- IUXS4 pallet scale

Configurations with explosion-protected FCT indicator in zone 1

- Combics EX platform, CAPSX
- IFXS4 flat-bed sale
- IUXS4 pallet scale

Alternative configuration versions

- IFX flat-bed scale
- IUX pallet scale
- EX load cell
Configurations with explosion-protected (EX) Combics indicator in zone 1

Hazardous area

- Combics EX platform
- Digital platform, IS-\text{--}X

Non-hazardous area

- Interface converter or Zener barrier
- PLC or PC

Configuration with IS-\text{--}X precision platform(s) in zone 1

Hazardous area

- IS-\text{--}X precision platform
- Up to 8 platform workstations can be networked!

Non-hazardous area

- RS-485/RS-232 C “ib”
- Interface converter or Zener barrier
- PLC or PC

Alternative configuration versions
Configurations with compact scales (Factory|Economy) in zone 1

Hazardous area

Factory series scale

Up to 8 Factory series scales can be networked!

Economy|Express series

Non-hazardous area

RS-232C|RS-485|TTY

Interface converter or Zener barrier

PLC or PC

Configurations with IS-X precision platforms in zone 1

Hazardous area

IS-X

Up to 8 platforms can be networked!

IS-X

ib

Ib

Combics indicator, CIXS3

Non-hazardous area

RS-485|RS-232C "ib"

Interface converter or Zener barrier

PLC or PC

Interface converter or Zener barrier

PLC or PC

Alternative configuration versions
Weighing equipment for use in zone 21 (dusts)

Zone 21 (acc. to CENELEC, IEC)
Division of hazardous areas according to the Directive 1999/92/EC, ATEX 137:

A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is likely to occur in normal operation occasionally.

This zone requires equipment group 2D (1D is also possible).

Combics series: CIXS3 indicator
- With built-in A/D converter for analog platforms for load cells up to 32 t;
- Optional interface for digital platform
- Type of ignition protection: intrinsically safe, ATEX: II 2 GD Ex ib IIC T4 T1 35°C
- Stainless steel housing with cable glands
- 2 interface ports (1 RS-232C, 1 RS-422), configurable by software
- 2 application kits for automatic single-component filling up to a target weight
- Can be networked with up to 8 client devices

Combics series: CAPXS platforms
- Weighing capacity from 0.1 g to 3 t, also factory-verified for legal metrology
- Type of ignition protection: intrinsically safe, ATEX: II 2 GD Ex ib IIC T4..T6 T135°...155°C
- 11 different sizes
- Low-profile, stainless steel design
- Other materials optional for the load plate, underframe, and lift-deck system
- Can be used with Combics CIXS3 indicator also in zone 20

Economy EC1XS stainless steel series
- Weighing capacity from 0.1 g to 3 t
- Type of ignition protection: intrinsically safe, ATEX: II 2 GD Ex ib IIC T4 T1 35°C
- Housing, display unit and platforms made of stainless steel
- RS-232C data interface standard (optional RS-422 data interface)

PR62...6 load cells
- Wide capacity range up to 300 t
- Type of ignition protection: intrinsically safe, ATEX: II 1G (also 2G depending on the type)
- 1D Ex ib IIC T4 T85°C IP65
- Completely hermetically encapsulated, IP68
- Various designs, mounting kits and accessories:
  - Tension and bending beam load cells made of special high-strength steel or stainless steel for platform, hybrid, tank and hopper scales and suspended vessels
  - Compression load cells made of highly corrosion-resistant stainless steel for precision weighing in tank, vessel and silo scales
  - PanCake® level cells, ultra-low profile design (25|35 mm), for level-by-weight measurements of liquids and bulk solids
  - Specialty load cells for trucks and freight cars

IFXS flat-bed scales
- Weighing capacity from 0.1 g to 3 t, also factory-verified for legal metrology (1 x 3000e|2 x 3000e; class lll)
- Type of ignition protection: intrinsically safe, ATEX: II 2 G Ex ib IIC T4; from 16 kg and up: II2G 1D Ex ib IIC T4 T135°C
- With monolithic weigh cell (metrological advantages; built-in, motorized calibration weight, advantageous for use in quality systems)
- RS-232C data interface standard (other optional data interfaces can be installed)
- For use as a digital, explosion-protected “weighing sensor” connected to PLCs or a max. of 2 platforms can be connected to the Combics indicator (in a hazardous area) or to a series X5 controller (in the non-hazardous area and connected via converter/barrier)
- Can be networked with up to 8 client devices

IUXS pallet scales
- Weighing capacity from 0.1 g to 1.5 t, also factory-verified for legal metrology
- Type of ignition protection: intrinsically safe, ATEX: II 2G 1D Ex ib IIC T4 T135°C
- High protection rating: IP68

Factory series:
IS-X digital precision platforms
- Weighing capacity from 0.001 g to 300 kg, also factory-verified for legal metrology
- Type of ignition protection: intrinsically safe, ATEX: II 2 G Ex ib IIC T4; from 16 kg and up: II2G 1D Ex ib IIC T4 T135°C
- With monolithic weigh cell (metrological advantages; built-in, motorized calibration weight, advantageous for use in quality systems)
- RS-232C data interface standard (other optional data interfaces can be installed)
- For use as a digital, explosion-protected “weighing sensor” connected to PLCs, or a max. of 2 platforms can be connected to the Combics indicator (in a hazardous area) or to a series X5 controller (in the non-hazardous area and connected via converter/barrier)
- Can be networked with up to 8 client devices
Configurations with IS-X precision platforms in zone 21

Hazardous area

RS-485/RS-232C “ib”

Non-hazardous area

Interface converter or Zener barrier

Hazardous area

IS-X
Up to 8 platform workstations can be networked!

IS-X

Non-hazardous area

Interface converter or Zener barrier

Configurations with platforms in zone 21

Hazardous area

Combies EX platform, CAPXS...

Non-hazardous area

Interface converter or Zener barrier

IFX flat-bed scale

IUXS4 pallet scale

IS-X precision platform

........ Alternative configuration versions
Configurations with load cells in zone 21

**Hazardous area**

- Load cells, e.g., PR62...
- Combics EX platform or IS-X precision platforms

**Non-hazardous area**

- PLC or PC
- Interface converter or Zener barrier
- Intrinsically safe interface
- X5, controller
- EX transmitter
- PLC or PC

---

Alternative configuration versions
Weighing equipment for use in zone 2 (gases)

Zone 2 (acc. to CENELEC, IEC)
Division of hazardous areas according to the Directive 1999/92/EC, ATEX 137:
A place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapor or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

This zone requires equipment group 3G (1G or 2G is also possible).

Combies series: CIS, indicator + Option Y2
- With built-in A/D converter for analog platforms or load cells up to 32 t
- Type of ignition protection: “restricted breathing enclosure” (non-breathing), ATEX: II 3 GD Ex nR II T6 T80°C
- In 4 versions featuring different levels of applications
- Stainless steel housing with cable glands
- 3 interface ports standard
- Can be networked with up to 8 client devices

Combies series: CAPx platforms + Option Y2
- Weighing capacity from 0.1 g to 3 t, also factory-verified for legal metrology
- Type of ignition protection: “non-sparking,” ATEX: II 3 GD Ex nA II T6 T80°C
- Low-profile, stainless steel design
- Other materials optional for the load plate, underframe and lift-deck system

Combies series: CW.Sx complete scale + Option Y2
- Weighing capacity from 0.1 g to 3 t, also factory-verified for legal metrology
- Type of ignition protection: “non-sparking, restricted breathing enclosure,” ATEX: II 3 GD Ex nAR II T6 T80°C
- 4 display unit versions featuring different levels of applications
- Stainless steel material, 11 different sizes
- Customized equipment and features (interfaces, materials…) optionally available

Factory series:
**IS digital precision platforms**
- Weighing capacity from 0.1 g to 300 kg, also factory-verified for legal metrology
- Type of ignition protection (150, 300 kg): “restricted breathing enclosure,” ATEX: II 3 GD Ex nR II T6 T80°C
- Type of ignition protection (16...64 kg): “non-sparking,” ATEX: II 3 GD Ex nA II T4 T80°C IP65 (without built-in, motorized calibration weight)
- RS-232C data interface standard (other optional data interfaces can be installed)
- Can be networked with up to 8 client devices

**Modular series: isi terminal/indicator**
- Terminal (or with built-in A/D converter as an indicator)
- 3 platforms max. can be connected
- Type of ignition protection: “energy limited,” ATEX: II 3 G Ex nL II t5
- With numerous applications programs that can be combined with one another
- Wide variety of interfaces

**IFS and IFP flat-bed scales with Option Y2**
- Weighing capacity 0.1 g to 3 t, also factory-verified for legal metrology
- IFS material: stainless steel; IFP material: painted steel; other materials optional
- Type of ignition protection: “non-sparking,” ATEX: II 3 GD Ex nA II T6 T80°C
- High-grade material and outstanding workmanship – design ideal for use in the pharmaceutical industry
- Easy to clean thanks to load plate lifting mechanism
- Exceptionally low-profile design for especially easy loading
- High protection rating: IP68

**IUS and IUG pallet scales with Option Y2**
- Weighing capacity from 0.1 g to 1.5 t, also factory-verified for legal metrology
(1 × 3000 e x 2 × 3000 e ; class 3D)
- IUS material: stainless steel; IUG material: galvanized steel
- Type of ignition protection: “non-sparking,” ATEX: II 3 GD Ex nA II T6 T80°C
- High protection rating: IP68

**Quality series:**
- QA and QC compact scales and QCT indicator
  - Weighing capacity from 0.1 g to 150 kg, also factory-verified for legal metrology
  - Type of ignition protection: “non-sparking, non-incendive circuits,” ATEX: II 3 G Ex nAC IIB T5
  - Combinable application programs and product memory
  - Numeric keypad
  - Type of protection rating: IP65

**Factory series: compact FD**
- Weighing capacity from 1 g to 300 kg, also factory-verified for legal metrology
- Type of ignition protection: “restricted breathing enclosure,” ATEX: II 3 G Ex nR II T6
- With monolithic weigh cell (metrological advantages; built-in, motorized calibration weight, advantageous for use in quality systems)
- RS-232C data interface standard
- Practical application programs

**Economy EA, EB series, PMA**
- Economy (aluminum die-cast): weighing capacity 0.1 g to 150 kg, also factory-verified for legal metrology, depending on the model
- Type of ignition protection: “non-sparking, non-incendive circuits,” ATEX: II 3 G Ex nAC IIB T4
- RS-232C data interface standard (optional RS-422 data interface)
- Backlit LCD

**PR17... transmitters**
- Modern field instrumentation for tank and hopper scales
- Type of ignition protection (PR171x digital transmitters): “non-sparking,” ATEX: II 3 G Ex nA II T4
- Type of ignition protection (PR1720 fieldbus transmitters): “non-sparking,” ATEX: II 3 GD Ex nA II T4 T100°C IP65
- Intrinsically safe load cell power supply
- With or without weight display
- “Smart calibration” via load cell data
- Field housing: IP65 or 19” Euroformat

**X5 controllers**
- Pre-programmed applications
- Type of ignition protection: “non-sparking, hermetically sealed device, energy limited,” ATEX: II 3 G Ex nAC IIB T4
- Easy menu-guided operation, integrated PLC function
- Option cards already installed

**Load cells**
- Wide capacity range up to 300 t
- Various designs (tension and bending beam load cells, compression load cells, PanCake® level cells, specialty load cells)

---

Zone 2 Explosive Gases Category II 3 G
Configurations with Combics and Option Y2 in zone 2

Hazardous area

Combics platform + Option Y2
Flat-bed scale + Option Y2
Pallet scale + Option Y2
IS... precision platform (12...300 kg)

Non-hazardous area

Combics indicator + Option Y2

Combinations with precision platforms in zone 2

Hazardous area

Combics platform|IS precision platform (12...300 kg)
Combics platform|IS precision platform (12...300 kg)

Non-hazardous area

X5 controller

isi terminal

PC

******** Alternative configuration versions
Configurations with indicator and analog platforms in zone 2

Configurations with complete scales | QC indicator in zone 2

Configuration with load cells in zone 2
Weighing equipment for use in zone 22 (dusts)

Zone 22 (acc. to CENELEC, IEC)
Division of hazardous areas according to the Directive 1999/92/EC, ATEX 137:
A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

This zone requires equipment group 3D (1D and 2D are also possible).

Combics series: CIS indicator + Option Y2
- Can be used with Option Y2 in zones 2 and 22
- With built-in A/D converter for analog platforms for load cells up to 32 t
- Type of ignition protection: "restricted breathing enclosure;" ATEX: II 3 GD Ex nR II T6 T80°C
- Stainless steel housing with cable glands
- 3 data interfaces standard
- Can be networked with up to 8 client devices

Combics series: CAPx platforms + Option Y2
- Weighing capacity from 0.1 g to 3 t, also factory-verified for legal metrology
- Type of ignition protection: "non-sparking," ATEX: II 3 GD Ex nA II T6 T80°C
- Low-profile, stainless steel design
- Other materials optional for the load plate, underframe and lift-deck system

Combics series: CW.S complete scale + Option Y2
- Weighing capacity from 0.1 g to 3 t, also factory-verified for legal metrology
- Type of ignition protection: "non-sparking, restricted breathing enclosure," ATEX: II 3 GD Ex nR II T6 T80°C
- 4 display unit versions featuring different levels of applications
- Stainless steel material, 11 different sizes
- Customized equipment and features (interfaces, materials...) optionally available

IFS and IP flat-bed scales with Option Y2
- Weighing capacity from 0.1 g to 3 t, also factory-verified for legal metrology (1 × 3000e|2 × 3000e; class III)
- IFS material: stainless steel; IIP material: painted steel; other materials optional
- Type of ignition protection: "non-sparking," ATEX: II 3 GD Ex nA II T6 T80°C
- High-grade material and outstanding workmanship – design ideal for use in the pharmaceutical industry
- Easy to clean thanks to load plate lifting mechanism
- Exceptionally low-profile design for especially easy loading
- High protection rating: IP68

IUS and IUG pallet scales with Option Y2
- Weighing capacity from 0.1 g to 1.5 t, also factory-verified for legal metrology (1 × 3000e|2 × 3000e; class III)
- IUS material: stainless steel; IUG material: galvanized steel
- Type of ignition protection: "non-sparking," ATEX: II 3 GD Ex nA II T6 T80°C
- High protection rating: IP68

Factory series: IS digital precision platforms
- Weighing capacity from 0.1 g to 300 kg, also factory-verified for legal metrology
- Type of ignition protection (150, 300 kg): "restricted breathing enclosure;" ATEX: II 3 GD Ex nR II T6 T80°C
- Type of ignition protection (16...64 kg): "non-sparking," ATEX: II 3 GD Ex nA II T6 T80°C
- RS-232C data interface standard (other optional data interfaces can be installed)
- For use as a digital, explosion-protected "weighing sensor" connected to PLCs, or a max. of 2 platforms can be connected to the Combics indicator (in a hazardous area) or to a series X5 controller (in the non-hazardous area)
- Can be networked with up to 8 client devices
- PR1720 fieldbus transmitter

PR1720 transmitters
- Modern field instrumentation for tank and hopper scales
- Type of ignition protection (PR1720 fieldbus transmitters): "non-sparking," ATEX: II 3 GD Ex nA II T4 T110°C IP65
- Intrinsically safe load cell power supply
- Fieldbus protocols, interface (also analog output)
- "Smart calibration" via load cell data
- Field housing: IP65

Discovery metal detector:
- For detection of metal particles
- Type of ignition protection, ATEX: II 3 D T80°C IP65
- Safeguards against machine damage and downtimes
- Optimal compliance with legal requirements, e.g., HACCP
- Assures product quality in compliance with ISO9001

Load cells
- Wide capacity range up to 300 t
- Various designs (tension and bending beam load cells, compression load cells, PanCake® level cells, specialty load cells)

Zone 22 Explosive Dusts Category II 3 D
Configurations with Combics and Option Y2 for zone 22

Hazardous area

- Combics platform + Option Y2
- Flat-bed scale + Option Y2
- Pallet scale + Option Y2
- IS...precision platform

Non-hazardous area

- Combics indicator + Option Y2
- PC

Configuration with Sartorius Discovery metal detector for zone 22

Hazardous area

- Discovery

Non-hazardous area

- PC with QA systems, e.g., with SPCWin

----- Alternative configuration versions
Configuration with load cells in zone 22
Aside from explosion-protected scales, zones 1, 20 and 21 equipment configurations require ATEX-compliant power supplies and Zener barriers or interface converters for data exchange in the non-hazardous area.

Flexible in powering Sartorius products for use in zone 1, 20 or 21

– In hazardous areas, the ambient conditions for the power supply vary considerably. Sartorius has responded to these requirements by offering explosion-protected scales that are independent of a specific power supply design. You can choose from the following power supplies that are available in the various international versions:
  – Power supply for installation in a hazardous area (110…240 V)
  – Rechargeable battery for installation in a hazardous area (110…240 V)
  – 24-volt module for installation in a non-hazardous or hazardous area (24 VDC); can also be installed in a control panel

Flexible data communication between hazardous area equipment and non-hazardous area peripherals

Usually, weighing equipment is connected to a report printer, a PC or a PLC located in the non-hazardous area. Both the hazardous and the non-hazardous area must be electrically isolated from each other.

Sartorius offers various solutions for isolation of intrinsically safe from non-intrinsically safe circuits. These solutions are compatible for all Sartorius product families:

– Zener barriers for different applications
– A universally configurable interface converter that can also be installed in zone 2

Independently of the particular data interface selected for the scale (RS-232C, RS-422, RS-485, TTY 20 mA) and the transmission rate, Sartorius Zener barriers and interface converters enable communication over various distances between peripherals in the non-hazardous area and the hazardous-area equipment.

Up to 8 client weighing devices with an RS-485 data interface can be networked in a hazardous area.

Typical weighing equipment configuration for zone 1 (II 2 G) and zone 21 (II 2 D)
Typical weighing equipment configuration for zone 2 (II 3 G) and zone 22 (II 3 D)

<table>
<thead>
<tr>
<th>Hazardous area</th>
<th>Non-hazardous area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combris platform + Option Y2</td>
<td>PC</td>
</tr>
<tr>
<td>e.g., Combris indicator + Option Y2</td>
<td>PLC</td>
</tr>
</tbody>
</table>

Alternative configuration versions