

This document will soon  
proudly feature our new  
brand & design – Minebea Intec



sartoriusintec

## PR 6251 PanCake® Level Sensor



500 kg... 16 t, L | LA | LE | LAC

- Easy and reliable mounting
- Stainless steel construction
- Optionally equipped with 4...20 mA output (LA/LAC)
- Extremely low installation height makes retrofitting easy
- Very large service temperature range
- Virtually no influence on weighing results from transversal forces
- 100% maintenance-free
- "Made in Germany" quality



### Applications

The PR 6251 range of sensors from Sartorius Intec is specially designed for easy weighing of silos and horizontal tanks, but also bulk and liquid materials. Thanks to its unique design principle, its construction is very compact. As a result, existing applications can also be upgraded very easily.

This product series is particularly distinguished by its unmatched reliability, robustness and stability which enable trouble-free operation without any re-adjustment, year after year.

High-quality materials and an in-house production process marked with the quality seal "Made in Germany" combine to achieve a product of unsurpassed quality.

### Technology

Special measuring element geometry ensures that the transmission of force into the sensor is always at the optimum level. This minimizes the effect on measurement accuracy whilst a high overload range, high repeatability and good linearity are maintained.

There is a particularly wide working temperature range attributable to special resistance strain gauge technology. The hermetically sealed enclosure and special TPE cable allow the unit to be used even under extreme operating conditions in harsh production environments.

The entire measurement chain can be calibrated without a reference weight.

A version with a direct output of 4 ... 20 mA is also available. This facilitates easy and cost-effective integration into an existing application.

An explosion-proof (Ex) version of this range of load cells is also available, as an option, for use in intrinsically safe environments.

**Sensor Construction**

Hermetically sealed, welded stainless steel construction, filled with polyurethane.

**Material**

- 500 kg... 5 t:  
1.4021 (DIN 17440), 420 S 37 (B.S.)
- 10 t and 16 t:  
1.4542 (DIN 17440), S 604/ S 622 (B.S.),  
17-4 PH (Int.)

**Protection**

IP68, IEC 529, equivalent to NEMA 6.  
The load cell can be submerged in water to a depth of 1.5 m for 10,000 hours. IP69k

**Cable**

Robust, flexible, screened  
Sheath: Thermopl. elastomere,  
Color: grey (LE: blue, LA | LAC: green)  
Diameter: 5 mm, wires 4 × 0.35 mm<sup>2</sup>  
Length: 5 m  
LAC with pre-assembled plug connections

**Bending Radius**

Fixed installation: ≥ 50 mm  
Flexible installation: ≥ 150 mm

**Certificate of Conformity**

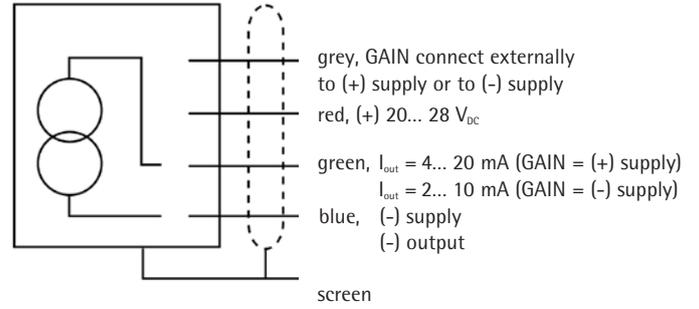
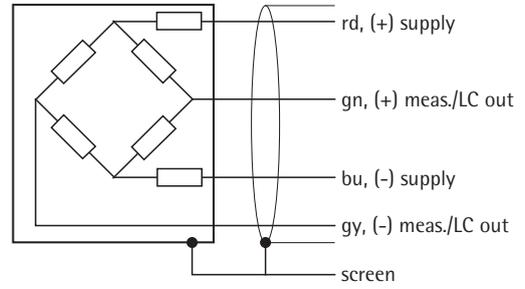
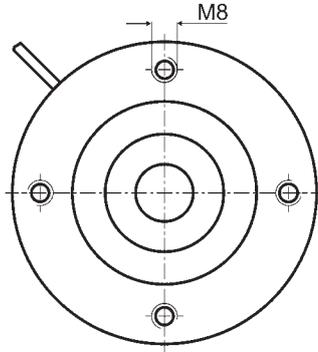
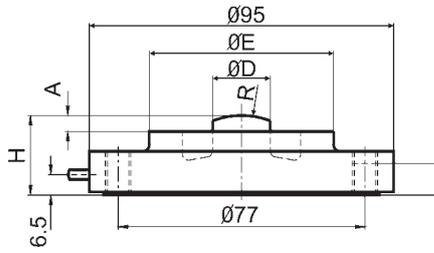
Label:  
II 1G EEx ia IIC T6, II 1D IP65 85 °C  
Approval number:  
PTB 02 ATEX 2059, TÜV 03 ATEX 2301x

| Technical Data                 |                                                                                                       |              | L   LE                         | LA   LAC                       |             |
|--------------------------------|-------------------------------------------------------------------------------------------------------|--------------|--------------------------------|--------------------------------|-------------|
| Accuracy class                 |                                                                                                       |              | 0.5                            | 0.5                            | %           |
| Minimum dead load              | lowest limit of specified measuring range                                                             | $E_{min}$    | 0                              | 5                              | % $E_{max}$ |
| Max. capacity                  | highest limit of specified measuring range                                                            | $E_{max}$    | s. table                       | s. table                       |             |
| Max. overload                  | upper limit for measurements                                                                          | $E_u$        | 150                            | 120                            | % $E_{max}$ |
| Destructive load               | danger of mechanical destruction                                                                      | $E_d$        | 300                            | 300                            | % $E_{max}$ |
| Rated output                   | relative output at nominal load                                                                       | $C_n$        | 2.0                            | 16 mA                          | mV/V        |
| Tolerance on rated output      | permissible deviation from rated output                                                               | $d_c$        | < 4                            | < 4                            | % $C_n$     |
| Tolerance on zero signal       | load cell output signal under unloaded condition                                                      | $S_{min}$    | < 4                            | 4 mA*                          | % $C_n$     |
| Repeatability error            | max. change in load cell output for repeated loading                                                  | $\epsilon_R$ | < 0.1                          | < 0.1                          | % $C_n$     |
| Creep, during 30 min           | max. change in load cell output under nominal load                                                    | $d_{cr}$     | < 0.1                          | < 0.1                          | % $C_n$     |
| Non-linearity                  | max. deviation from best straight line through zero                                                   | $d_{lin}$    | < 0.25                         | < 0.25                         | % $C_n$     |
| Hysteresis                     | max. difference in load cell output when loading from zero to nominal load and unloading back to zero | $d_{hy}$     | < 0.15                         | < 0.15                         | % $C_n$     |
| Temperature effect (on zero)   | max. change of $S_{min}/10$ K D T over $B_r$ referred to $C_n$                                        | $TKS_{min}$  | < 0.15 < 0.15                  | % $C_n/10$ K                   |             |
| Temperature effect (on output) | max. change of $C/10$ K D T over $B_r$ referred to $C_n$                                              | $TK_c$       | < 0.1 < 0.1                    | % $C_n/10$ K                   |             |
| Input impedance                | between supply terminals                                                                              | $R_{iC}$     | 645 ± 60                       | -                              | $\Omega$    |
| Output impedance               | between measuring terminals                                                                           | $R_{oC}$     | 635 ± 15                       | -                              | $\Omega$    |
| Insulation impedance           | between measuring circuit and housing 100 V <sub>DC</sub>                                             | $R_{iS}$     | > 5,000 × 10 <sup>6</sup>      | -                              | $\Omega$    |
| Recommended supply voltage     | to hold the specified performance                                                                     | $B_u$        | 4... 24                        | 20... 28                       | V           |
| Max. supply voltage            | permissible for continuous operation without damage                                                   | $U_{max}$    | 32   25                        | 28                             | V           |
| Nominal ambient temp. range    | to hold the specified performance                                                                     | $B_u$        | -10... +70                     | -10... +55                     | V           |
| Usable ambient temp. range     | permissible for continuous operation without damage                                                   | $B_{tu}$     | -30... +95                     | -30... +70                     | °C          |
| Storage temperature range      | without electrical and mechanical stress                                                              | $B_{ti}$     | -40... +95                     | -40... +80                     | °C          |
| Permissible eccentricity       | permissible displacement from nominal load line                                                       | $S_{ex}$     | 10                             | 10                             | mm          |
| Vibration resistance           | resistance against oscillation (IEC68-2-6Fc)                                                          | -            | 20 g, 100 h,<br>10... 150 Hz   | 20 g, 100 h,<br>10... 150 Hz   |             |
| Air pressure effects           | influence of ambient air pressure on $S_{min}$                                                        | $PK_{Smin}$  | ≤ 20                           | ≤ 20                           | g/kPa       |
| Nominal deflection             | max. elastic deformation under nominal load                                                           | $S_{nom}$    | up to 2 t < 0.1/<br>16 t < 0.2 | up to 2 t < 0.1/<br>16 t < 0.2 | mm          |

\* Tolerance on zero output signal: ± 4%  $C_n$

Definitions acc. to VDI / VDE 2637

The technical data given are intended solely as a product description and should not be conceived as guaranteed properties in the legal sense.



Dimensions in mm

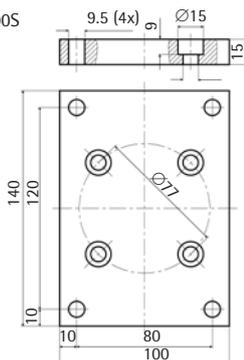
**Ordering Information**

| Type       | Nominal Load E <sub>max</sub> | Version             | Packing Size       | Weight gross   net | Dimensions in mm |      |      |    |     |
|------------|-------------------------------|---------------------|--------------------|--------------------|------------------|------|------|----|-----|
|            |                               |                     |                    |                    | A                | D    | E    | H  | R   |
| PR 6251/52 | 500 kg                        | ..L   LA   LE   LAC | 220 × 215 × 135 mm | 1.2 kg   0.9 kg    | 5                | 18   | 57.5 | 25 | 25  |
| PR 6251/13 | 1 t                           | ..L   LA   LE   LAC | 220 × 215 × 135 mm | 1.2 kg   0.9 kg    | 5                | 18   | 57.5 | 25 | 25  |
| PR 6251/23 | 2 t                           | ..L   LA   LE   LAC | 220 × 215 × 135 mm | 1.2 kg   0.9 kg    | 5                | 18   | 57.5 | 25 | 35  |
| PR 6251/33 | 3 t                           | ..L   LA   LE   LAC | 220 × 215 × 135 mm | 1.2 kg   0.9 kg    | 5                | 18   | 57.5 | 25 | 50  |
| PR 6251/53 | 5 t                           | ..L   LA   LE   LAC | 220 × 215 × 135 mm | 1.2 kg   0.9 kg    | 5                | 18   | 57.5 | 25 | 50  |
| PR 6251/14 | 10 t                          | ..L   LA   LE   LAC | 220 × 215 × 135 mm | 1.4 kg   1.1 kg    | 8                | 21.7 | 57.5 | 35 | 70  |
| PR 6251/24 | 16 t                          | ..L   LA   LE   LAC | 220 × 215 × 135 mm | 1.4 kg   1.1 kg    | 5                | 23   | 67   | 35 | 100 |

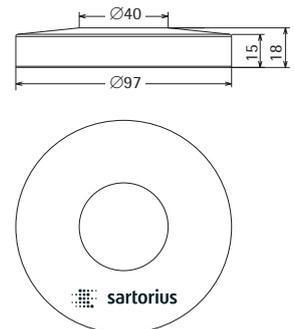
**Other Accessories**

| Type        | Description                                                                                   | Dimensions        | Order numbers  |
|-------------|-----------------------------------------------------------------------------------------------|-------------------|----------------|
| PR 6051/12S | Baseplate                                                                                     | Ø 97 mm           | 9405 960 51122 |
| PR 6051/00S | Transition plate                                                                              | 140 × 100 × 15 mm | 9405 960 51002 |
| PR 6051/20S | Screw-in adapter for an easy modification of vessels with weighing technology, 500 kg – 2 t.  | G 1" thread       | 9405 360 51202 |
| PR 6051/21S | Screw-in adapter for an easy modification of vessels with weighing technology, 500 kg – 5 t.  | G 1 1/2" thread   | 9405 360 51212 |
| PR 6051/22S | Screw-in adapter for an easy modification of vessels with weighing technology, 500 kg – 10 t. | G 2" thread       | 9405 360 51222 |

Transition plate PR 6051/00S



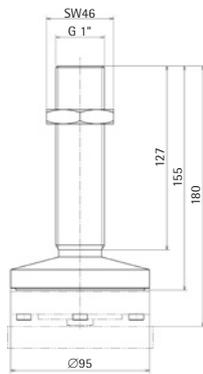
Baseplate PR 6051/12S (500 kg...16t)



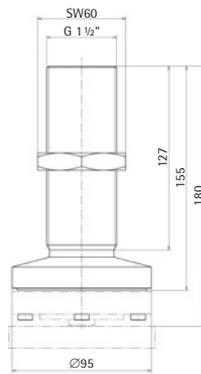
Dimensions in mm

Dimensions in mm

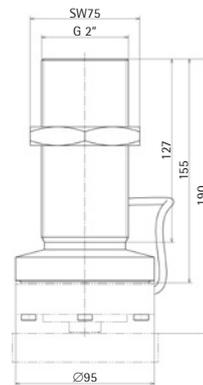
PR 6051/20S



PR 6051/21S



PR 6051/22S



Dimensions in mm

Dimensions in mm

Dimensions in mm

The screw-in adapter, transition plate and baseplate are made of steel 1.4301.  
Included in delivery are following items: Adapter, counter nut, o-ring and attachment bolts.

| Type         | Accessories                                                     |                                                                                                                                         | Dimensions        | Order number   |
|--------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------|
| PR 6130/08   | Plastic cable junction box                                      | Material: polycarbonate, protection class IP65, max. 8 load cells                                                                       | 200 × 120 × 75 mm | 9405 361 30083 |
| PR 6130/04N  | Cable junction box                                              | Material: aluminum, grey painted, protection class IP67, max. 4 load cells                                                              | 175 × 80 × 57 mm  | 9405 361 30043 |
| PR 6130/34Sa | Cable junction box                                              | Material: stainless steel 1.4301, IP68, IP69K for all industrial applications in legal metrology, max. 4 load cells                     | 190 × 160 × 60 mm | 9405 361 30343 |
| PR 6130/35S  | Cable junction box                                              | Material: stainless steel 1.4301, IP68, IP69K for all industrial applications in legal metrology, max. 4 load cells                     | 172 × 105 × 55 mm | 9405 361 30353 |
| PR 6130/38S  | Cable junction box                                              | Material: stainless steel 1.4404, IP68, IP69K for all industrial applications in legal metrology, max. 8 load cells                     | 240 × 170 × 70 mm | 9405 361 30383 |
| PR 6130/64Sa | Cable junction box for applications in explosion-hazarded areas | Material: stainless steel 1.4301, IP68, IP69K for all industrial, intrinsically safe applications in legal metrology, max. 4 load cells | 190 × 160 × 60 mm | 9405 361 30643 |
| PR 6130/65S  | Cable junction box for applications in explosion-hazarded areas | Material: stainless steel 1.4301, IP68, IP69K for all industrial, intrinsically safe applications in legal metrology, max. 4 load cells | 172 × 105 × 55 mm | 9405 361 30653 |
| PR 6130/68S  | Cable junction box for applications in explosion-hazarded areas | Material: stainless steel 1.4404, IP68, IP69K for all industrial, intrinsically safe applications in legal metrology, max. 8 load cells | 240 × 170 × 70 mm | 9405 361 30683 |
| PR 6135      | Extension cable                                                 | for all applications, grey                                                                                                              | D = 9 mm          | 9405 361 35..2 |
| PR 6135/..A  | Extension cable, armored                                        | for all applications, grey                                                                                                              | D = 13 mm         | 9405 361 35..9 |
| PR 6136      | Extension cable                                                 | for all intrinsically safe applications, blue                                                                                           | D = 11 mm         | 9405 361 36..2 |
| PR 6136/..A  | Extension cable, armored                                        | for all intrinsically safe applications, blue                                                                                           | D = 13 mm         | 9405 361 35..9 |
| PR 6151/05C1 | Connection cable                                                | Connection cable with 1 connector 5 m                                                                                                   |                   | 9405 361 51051 |
| PR 6151/05C2 | Connection cable                                                | Connection cable with 2 connectors 5 m                                                                                                  |                   | 9405 361 51052 |
| PR 6151/11C1 | Connection cable                                                | Connection cable with 1 connector 10 m                                                                                                  |                   | 9405 361 51101 |
| PR 6151/11C2 | Connection cable                                                | Connection cable with 2 connectors 10 m                                                                                                 |                   | 9405 361 51102 |
| PR 6151/21C1 | Connection cable                                                | Connection cable with 1 connector 20 m                                                                                                  |                   | 9405 361 51201 |
| PR 6151/21C2 | Connection cable                                                | Connection cable with 2 connectors 20 m                                                                                                 |                   | 9405 361 51202 |
| PR 6151/31C1 | Connection cable                                                | Connection cable with 1 connector 30 m                                                                                                  |                   | 9405 361 51301 |
| PR 6151/31C2 | Connection cable                                                | Connection cable with 2 connectors 30 m                                                                                                 |                   | 9405 361 51302 |
| PR 6151/51C1 | Connection cable                                                | Connection cable with 1 connector 50 m                                                                                                  |                   | 9405 361 51501 |
| PR 6151/51C2 | Connection cable                                                | Connection cable with 2 connectors 50 m                                                                                                 |                   | 9405 361 51502 |
| PR 6051/02   | Connection unit                                                 | for connection of 1 or 2 load cells with a digital display in field housing                                                             |                   | 9408 360 51021 |

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