



PR 6201 (100 t ... 520 t) Precision Compression Load Cell



100 t, 200 t, 300 t, 520 t, Type L | LA | N

- Easy to install
- Well-proven rockerpin design
- Full stainless steel housing
- Wide temperature range
- High overload capacity
- Resistant against vibrations
- IP68, IP69K
- Suitable for Smart Calibration
- Optionally available with an extended Temperature range up to 150 °C
- Ex-Version available
- Optionally available as dual bridge version
- In combination with selected mounting kits certified according to EN 1090

Product Profile

The PR 6201 range of load cells is specially designed for weighing silos, tanks and process vessels.

The unique design principle, in combination with the FlexLock installation kits, makes it possible to balance out movements arising from mechanical or thermal expansion or contraction of the vessel or its supporting construction.

Alongside this, the unit has an especially high overload capacity of up to 200%.

At the same time, this range distinguishes itself – in addition to its high measurement accuracy and repeatability – above all for its unmatched reliability, robustness and stability, which offer trouble-free operation without adjustment, year after year.

The pendulum support principle, combined with patented measuring element geometry, ensures that force transmission into the sensor is always at the optimum level and, in this way, the effect on measurement accuracy is minimized. At the same time, the load cell offers a particularly high overload range, high repeatability and perfect linearity.

There is an especially wide working temperature range attributable to sophisticated 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 the use of reference weights. Due to "matched output" technology, a damaged load cell can be exchanged without the need for re-calibration. This saves a tremendous amount of time during commissioning.

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

Restoring force

For each mm of movement that the top of the load cell shifts from the vertical axis, the following horizontal restoring force is generated:

Emax 100 t:

1.23 % of the vertical load on the load cell

Emax 200 t:

0.65 % of the vertical load on the load cell

Emax 300 t:

0.65 % of the vertical load on the load cell

Emax 520 t:

1.20 % of the vertical load on the load cell

Load cell housing

Full stainless steel housing, membrane and measuring element hermetically sealed, welded, filled with inert gas.

Material-No: 1.4301 (DIN 17440), equivalent to 304 S11/S15 (B.S.)

Ingress 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: TPE Thermopl. Elastomere, grey (for PR 6201/..E: blue)
Diameter: 5 mm, wires 4 × 0.35 mm²
Length: 12 m

Bending radius:

Fixed installation: ≥ 50 mm

Flexible installation: ≥ 150 mm

Certificate of conformity

Valid for: PR 6201/..E

Feature:

II 1 G EEx ia IIC T6, II 1D IP65 T 85 °C

Registration number:

PTB 02 ATEX 2059, TÜV 03 ATEX 2301x

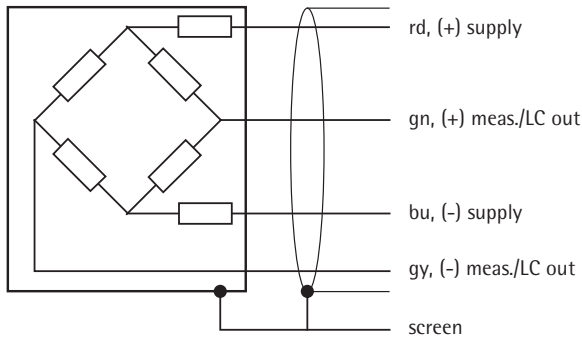
High temperature

This load cell is optionally available with an extended usable temperature range of -40 °C to +150 °C

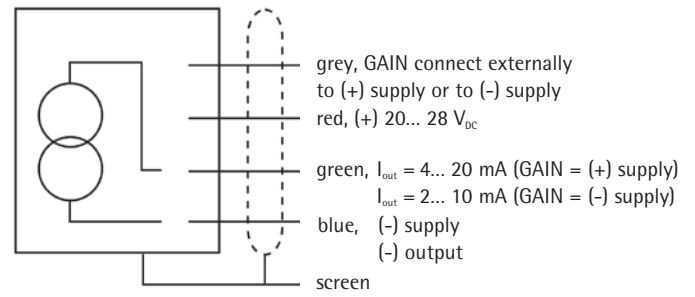
Technical Data

| | | | LA | L | N | |
|--|--|--------------------|---|--------------------------------|---------------------------|----------------------|
| Accuracy class | | | 0.5 | 0.5 | 0.06 | %E _{max} |
| Minimum dead load | lowest limit of specified measuring range | E _{min} | 0 | | | %E _{max} |
| Maximum capacity | highest limit of specified measuring range | E _{max} | see table | | | kg |
| Rated output | relative output at maximum capacity | C _n | 16 mA | 1.0 (520 t: 2.6) | 1.0 (300 t: 1.5) | mV/V |
| Tolerance on rated output | permissible deviation from rated output | d _c | < 1.0 | < 1.0 | < 0.25 | %C _n |
| Zero output signal | load cell output signal under unloaded condition | S _{min} | 4 mA | < 2.0 | < 1.0 | %C _n |
| Repeatability error | max. change in load cell output for repeated loading | e _R | < 0.02 | < 0.02 | < 0.01 | %C _n |
| Creep, during 30 min. | max. change in load cell output under nominal load | d _{cr} | < 0.05 | < 0.05 (< 0.02 at 520 t) | < 0.03 | %C _n |
| Non-linearity | max. deviation from best straight line through zero | d _{lin} | < 0.3 | < 0.3 (520 t: < 0.1) | < 0.05 | %C _n |
| Hysteresis | max. difference in LC output between loading and unloading | d _{hy} | < 0.25 | < 0.25 (520 t: < 0.5) | < 0.06 (100 t: < 0.04) | %C _n |
| Temperature effect on S _{min} | max. change of S _{min} per 10K over B _r referred to C _n | TK _{Smin} | < 0.2 | < 0.2 | < 0.06 | %C _n /10K |
| Temperature effect on C | max. change of C per 10K over B _r referred to C _n | TK _C | < 0.1 | < 0.1 | < 0.03 | %C _n /10K |
| Input impedance | between supply terminals | R _{LC} | - | 650 ± 50 | 650 ± 6 | Ω |
| Output impedance | between measuring terminals | R ₀ | - | 610 ± 3 | 610 ± 1 | Ω |
| Insulation impedance | between measuring circuit and housing at 100 V _{DC} | R _{IS} | - | > 5000 × 10 ⁶ | | Ω |
| Insulation voltage | between circuit and housing, PR 62..E only | | - | 500 | | V |
| Recommended supply voltage | to hold the specified performance | B _u | 20 ... 28 | 4 ... 24 | 4 ... 24 | V |
| Max. supply voltage | permissible for continuous operation without damage | U _{max} | 28 | 32 (NE- and LE-Version: 25) | | V |
| Nominal ambient temp. range | to hold the specified performance | B _r | -10 ... +55 | -10 ... +55 | -10 ... +55 | °C |
| Usable ambient temp. range | permissible for continuous operation without damage | B _{ru} | -30 ... +55 | -40 ... +95 | -40 ... +95 | °C |
| Storage temperature range | transportation and storage | B _{ri} | -40 ... +70 | -40 ... +95 | -40 ... +95 | °C |
| Permissible eccentricity | permissible displacement from nominal load line | S _{ex} | 10 | 10 | 10 | mm |
| Vibration resistance | resistance against oscillations (IEC 68-2-6 Fc) | | 20 g, 100 h, 10 ... 150 Hz | | | |
| Air pressure effect | influence of ambient air pressure on S _{min} | PK _{Smin} | 100 t: 700 / 200 t + 300 t + 520 t: 1400 g/kPa 100 t: 1.0 / 200 t: 1.6 / 300 t: 2.4 / 520 t: | | | |
| Nominal deflection | max. elastic deformation under nominal load | S _{nom} | 100 t: 1.0 | 200 t: 1.6 | 300 t: 2.4 | mm (520 t: 2.7) |

PR 6201/...L, N, NE

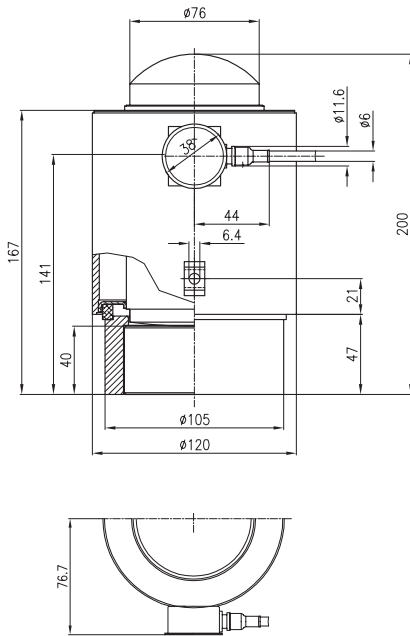


PR 6201/...LA

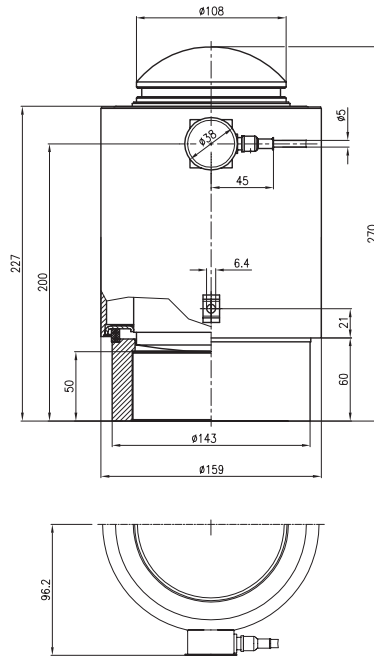


Connections diagrams

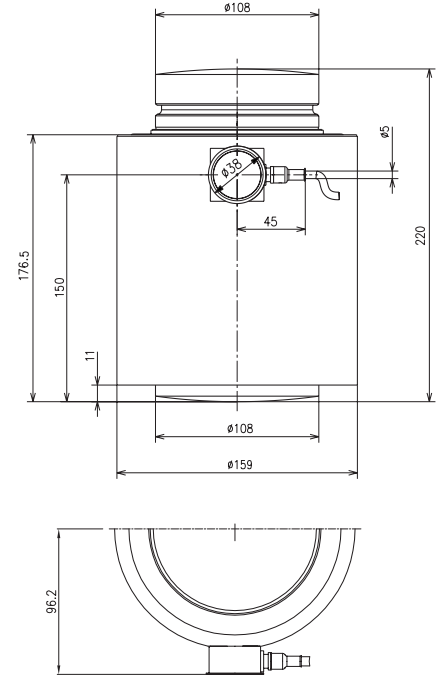
PR 6201/15



PR 6201/25 ... /35



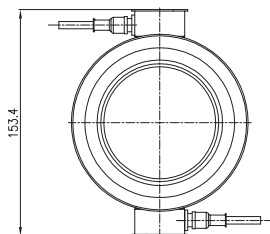
PR 6201/520t



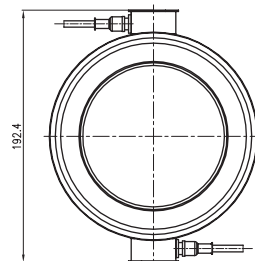
Dimensions in mm

Delivery without Load and bottom disc

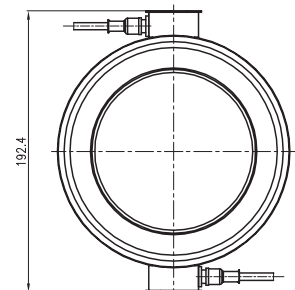
PR 6201/15 Dual Bridge



PR 6201/25 ... /35 Dual Bridge



PR 6201/520t Dual Bridge



Dimensions in mm

Order information

| Type | Rated capacity E _{max} | Version | Max. usable load | Destructive load | Packing | Weight gross net |
|--------------|------------------------------------|------------------------------|-------------------|------------------|-----------------|-----------------------|
| PR 6201/15 | 100 t | L LA N NE NDB NDBE | 200 t (LA: 120 t) | 500 t | 250 × 250 × 270 | 12.0 kg 10.8 kg |
| PR 6201/25 | 200 t | LA N NE NDB NDBE | 400 t (LA: 240 t) | 1000 t | 280 × 280 × 320 | 27.0 kg 25.4 kg |
| PR 6201/35 | 300 t | N NE NDB NDBE | 400 t | 1000 t | 280 × 280 × 320 | 27.0 kg 25.4 kg |
| PR 6201/520t | 520 t | L LE LDB LDBE | 550 t | 1000 t | 280 × 280 × 320 | 20.9 kg 20.9 kg |

| Options | | | | |
|----------------|--|---|--------------------------------------|---------------------|
| Type | Equipment | | Dimensions (w × l × h mm) | Order Number |
| PR 6130/08 | Cable junction box | Material: Polycarbonate, Protection class IP65, for up to 8 load cells | 200 × 120 × 75 | 9405 361 30083 |
| PR 6130/04N | Cable junction box | Material: Aluminium, painted, Protection class IP67, for up to 4 load cells | 175 × 80 × 57 | 9405 361 30043 |
| PR 6130/34Sa | Cable junction box | Material: stainless steel 1.4301, IP68, IP69K for all industrial, W&M applications, for up to 4 load cells | 190 × 160 × 60 | 9405 361 30343 |
| PR 6130/35S | Cable junction box | Material: stainless steel 1.4301, IP68, IP69K for all industrial, W&M applications, for up to 4 load cells | 172 × 105 × 55 | 9405 361 30353 |
| PR 6130/38S | Cable junction box | Material: stainless steel 1.4404, IP68, IP69K for all industrial, W&M applications, for up to 8 load cells | 240 × 170 × 70 | 9405 361 30383 |
| PR 6130/64Sa | Cable junction box for Ex-Applications | Material: stainless steel 1.4301, IP68, IP69K for all industrial, intrinsically safe and W&M applications, for up to 4 load cells | 190 × 160 × 60 | 9405 361 30643 |
| PR 6130/65S | Cable junction box for Ex-Applications | Material: stainless steel 1.4301, IP68, IP69K for all industrial, intrinsically safe and W&M applications, for up to 4 load cells | 172 × 105 × 55 | 9405 361 30653 |
| PR 6130/68S | Cable junction box for Ex-Applications | Material: stainless steel 1.4404, IP68, IP69K for all industrial, intrinsically safe and W&M applications, for up to 8 load cells | 240 × 170 × 70 | 9405 361 30683 |
| PR 6135 | Installation cable | for industrial applications, grey | D = 9 | 9405 361 35..2 |
| PR 6135/..A | Installation cable | reinforced with reinforced coating for industrial applications, grey | D = 13 | 9405 361 35..9 |
| PR 6136 | Installation cable | for intrinsically safe applications, blue | D = 11 | 9405 361 36..1 |
| PR 6136/..A | Installation cable | reinforced with reinforced coating for intrinsically safe applications, blue | D = 13 | 9405 361 36..9 |
| PR 6143/55N | Load and bottom disc | for PR 6201 (520 t) | ∅ 138 × 358 | 9405 361 43551 |
| PR 6145/08N | Platten-Einbausatz | for PR 6201 (100 t) | 180 × 130 × 290 | 9405 361 45081 |
| PR 6145/10N | Platten-Einbausatz | for PR 6201 (200 t ... 300 t) | 220 × 180 × 385 | 9405 361 45101 |
| PR 6143/15N | MiniFLEXLOCK | for PR 6201 (100 t) | 400 × 300 × 290 | 9405 361 43151 |
| PR 6143/25N | MiniFLEXLOCK | for PR 6201 (200 t ... 300 t) | 400 × 340 × 385 | 9405 361 43251 |
| PR 6001/02N | Universal vessel foot | for PR 6201 (100 t) | 300 × 130 × 290 | 9405 360 01021 |
| PR 6001/03N | Universal vessel foot | for PR 6201 (200 t ... 300 t) | 370 × 180 × 385 | 9405 360 01031 |
| PR 6001/32N | MaxiFLEXLOCK | for PR 6201 (100 t) | 660 × 340 × 350 | 9405 360 01321 |
| PR 6001/33N | MaxiFLEXLOCK | for PR 6201 (200 t ... 300 t) | 730 × 380 × 445 | 9405 360 01331 |
| PR 6144/15N | SeismicMount | for PR 6201 (100 t) | 950 × 310 × 298 | 9405 361 44151 |
| PR 6144/35N | SeismicMount | for PR 6201 (200 t ... 300 t) | 1150 × 350 × 387 | 9405 361 44351 |
| PR 6144/55N | SeismicMount | for PR 6201 (520 t) | 1180 × 350 × 428 | 9405 361 44551 |
| PR 6101/15N | Pivot | for level measuring in combination with PR 6143/15N | 300 × 130 × 290 | 9405 561 01151 |
| PR 6101/25N | Pivot | for level measuring in combination with PR 6143/15N | 450 × 180 × 385 | 9405 561 01251 |
| PR 6143/80 | Constrainer | as additional stabilization, max. horizontal force 2 kN | | 9405 361 43801 |
| PR 6143/83 | Constrainer | as additional stabilization, max. horizontal force 20 kN | | 9405 361 43831 |
| PR 6152/02 | Constrainer | as additional stabilization, max. horizontal force 200 kN | | 9405 361 52021 |
| PR 6001/9x | Welding plates | for PR 6001 Mounting kits | | 9405 360 019..1 |

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