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# PR 6202 1 t... 50 t
# Precision Compression Load Cell


**1 t... 50 t, Typ C1 | C3 | C4**

- Proven rocker-pin principle
- Easy Corner adjustment by matched load cell outputs
- Full stainless steel construction
- Wide operating temperature range
- High overload capacity
- Resistant against vibration
- Hermetically sealed, IP68 (depth of 1.5 m for 10,000 hours), IP69K, (equiv. NEMA 6)
- Ex-version available (PR 6202/..E)
- W & M approval (acc. to OIML R60)
- Meets EHEDG requirements
- Registered Design Nos.
  EU 000 210 349-0001/-0002
  JP 2005 – 478
  US 22/222, 249

**Application**
The PR 6202 range of load cells is specially designed to meet the high demands of the food, pharmaceutical and chemical industries. These products are made completely from stainless steel and are specially designed for use with process vessels. All horizontal surfaces are inclined for easy draining, and gaps and undercuts have purposely been avoided. The materials and surface quality were also selected to ensure the load cell meets tried and tested international standards and specifications.

The load cell's unique design principle, combined with mounting kits specially adapted for the application, enables it to counteract movements arising from mechanical or thermal contraction of the vessel or its supporting construction – without affecting the high accuracy.

**Product Profile**

**Hygienic Design**
A particular design characteristic is the consistent application of hygienic design principles, in accordance with the specifications of the European Hygienic Engineering Design Group (EHEDG).

**High reliability**
This range distinguishes itself with its high level of reliability, robustness and stability, which enable trouble-free operation without adjustment year after year.

The rocker-pin principle, combined with patented measuring element geometry, ensures that force transmission into the sensor is always at the optimum level. In this way the effects of environmental forces on measurement accuracy are minimized. At the same time, the load cell offers a particularly high overload range, high repeatability and perfect linearity.

**Wide working temperature**
There is an especially 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.

**Easy commissioning**
Due to "matched output" technology, not only is it possible to exchange a damaged load cell without the need for calibration but the entire measurement chain can also be pre-calibrated without a reference weight. This saves a tremendous amount of time during commissioning.

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

**Restoring force**
for each mm of displacement of the top of the load cell from the vertical line:
$E_{max} \leq 6$ t: 0.65 % of the actual load on the load cell
$E_{max} = 10$ t: 0.76 % of the actual load on the load cell
$E_{max} \geq 25$ t: 1.58 % of the actual load on the load cell

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

**Material**
Housing made from 1.4404 (DIN 17440), equivalent to AISI 316L.

**Ingress protection**
IP68, IEC 529/EN60529: 1.5 m water columm/10,000 h.
IP69K, DIN 40050: water under high pressure, steam cleaning,
Sealing equivalent to NEMA 6.

**Cable**
Robust, flexible, screened
Sheath: TPE thermoplastic elastomer, colour grey
for PR 6202/..E: blue
Diameter: 5 mm, wires 4 × 0.35 mm²
Length: 5 m (up to 10 t), 12 m (from 25 t)

**Bending radius**
Fixed installation: ≥ 50 mm
Flexible installation: ≥ 150 mm

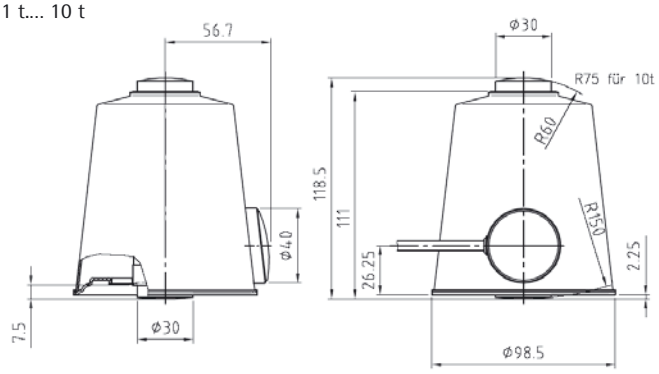
**Certificate of conformity**
Valid for: PR 6202/..E
Protection type: intrinsic safety
Marking:
II 1 G EEx ia IIC T6, II 1D IP65 85°C
Registration number:
PTB 02 ATEX 2059, TÜV 03 ATEX 2301

| **Technical Data** | | | **C1** | **C3** | **C4** | |
|---|---|---|---|---|---|---|
| Accuracy class | | | 0.03 | 0.015 | 0.012 | % $E_{max}$ |
| Minimum dead load | lowest limit of specified measuring range | $E_{min}$ | 0 | 0 | 0 | % $E_{max}$ |
| Rated capacity | highest limit of specified measuring range | $E_{max}$ | s. table | s. table | s. table | |
| Max. usable load | upper limit of measurements | $E_u$ | 150 | 150 | 150 | % $E_{max}$ |
| Destructive load | danger of mechanical destruction | $E_d$ | > 300 | > 300 | > 300 | % $E_{max}$ |
| Minimum LC verification | minimum load cell verification interval, $v_{min} = E_{max}/Y$<br>for $E_{max} = 2$ t<br>for $E_{max} = 1$ t | Y | 5,000<br>5,000<br>5,000 | 14,000<br>10,000<br>- | 16,000<br>-<br>- | |
| Deadload output return | factor for dead load output return after load (DR = 1/2*$E_{max}$/Z) | Z | 1,000 | 3,000 | 4,000 | |
| Rated output | relative output at nominal load | $C_n$ | 2 | 2 | 2 | mV/V |
| Tolerance on rated output | permissible deviation from rated output | $d_c$ | < 0.25 | < 0.07 | < 0.07 | %$C_n$ |
| Zero output signal | load cell output signal under unloaded condition | $S_{min}$ | < 1.0 | < 1.0 | < 1.0 | %$C_n$ |
| Repeatability error | max. change in load cell output for repeated loading | $\varepsilon_R$ | < 0.01 | < 0.005 | < 0.005 | %$C_n$ |
| Creep, during 30min | max. change in load cell output under nominal load | $d_{cr}$ | < 0.03 | < 0.015 | < 0.0125 | %$C_n$ |
| Non-linearity | max. deviation from best straight line through zero | $d_{Lin}$ | < 0.03 | < 0.01 | < 0.01 | %$C_n$ |
| Hysteresis | max. difference in LC output between loading and unloading | $d_{hy}$ | < 0.03 | < 0.015 | < 0.0125 | %$C_n$ |
| Temperature effect on $S_{min}$ | max. change of $S_{min}$ per 10 K over $B_T$ referred to $C_n$ | $TK_{Smin}$ | < 0.028 | < 0.01 | < 0.007 | % $C_n$/10 K |
| Temperature effect on C | max. change of C per 10 K over $B_T$ referred to $C_n$ | $TK_C$ | < 0.02 | < 0.01 | < 0.008 | % $C_n$/10 K |

| **Technical Data** | | | **C1 \| C3 \| C4** | |
|---|---|---|---|---|
| Input impedance | between supply terminals | $R_{LC}$ | 1,080 ± 10 | Ω |
| Output impedance | between measuring terminals | $R_O$ | 1010 ± 2  1010 ± 1  1010 ± 1 | Ω |
| Insulation impedance | between measuring circuit and housing at 100 $V_{DC}$ | $R_{IS}$ | > 5,000 × $10^6$ | Ω |
| Insulation voltage | between circuit and housing, PR 62../..E only | | 500 | V |
| Recommended supply voltage | to hold the specified performance | $B_u$ | 4... 24 | V |
| Max. supply voltage | permissible for continuous operation without damage | $U_{max}$ | 32 (Ex: 25) | V |
| Nominal ambient temp. range | to hold the specified performance | $B_T$ | -10... +70  -10... +55  -10... +55 | °C |
| Usable ambient temp. range | permissible for continuous operation without damage | $B_{Tu}$ | -40... +95 | °C |
| Storage temperature range | transporation and storage | $B_{Ti}$ | -40... +95 | °C |
| Permissible eccentricity | permissible displacement from nominal load line | $S_{ex}$ | 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 $S_{min}$ | $PK_{Smin}$ | 1 t... 10 t: 190/25 t... 50 t: 390 | g/kPa |
| Nominal deflection | max.elastic deformation under nominal load | $S_{nom}$ | bis 6 t: < 0.3/25 t: 0.5/50 t: 0.8 | mm |

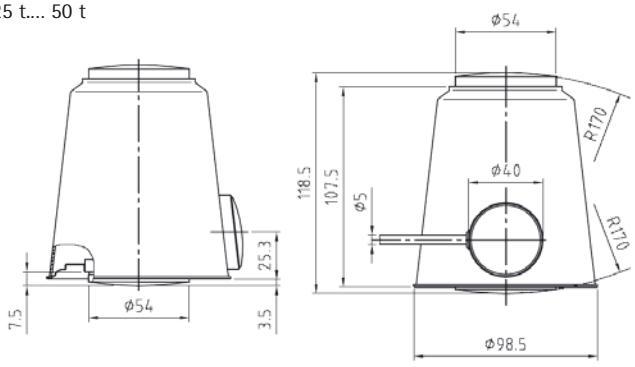
Definitions acc. to VDI/VDE 2637
The technical data given here serve only as a product description and must not be interpreted as guaranteed characteristics in the legal sense.

1 t.... 10 t

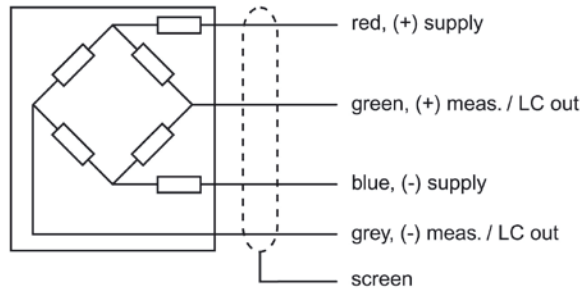



Dimensions in mm

25 t.... 50 t




Dimensions in mm




**Order information**

| Type | Rated Capacity $E_{max}$ | Version | Max. usable load (in % of $E_{max}$) | Destructive load (in % of $E_{max}$) | Packing | Weight gross \| net |
|---|---|---|---|---|---|---|
| PR 6202/1t | 1 t | C1 \| C1E | 150 | > 300 | 240 × 240 × 155 mm | 2.1 kg \| 1.2 kg |
| PR 6202/2t | 2 t | C1 \| C3 \| C1E \| C3E | 150 | > 300 | 240 × 240 × 155 mm | 2.1 kg \| 1.2 kg |
| PR 6202/4t | 4 t | C1 \| C3 \| C4 \| C1E \| C3E \| C4E | 150 | > 300 | 240 × 240 × 155 mm | 2.1 kg \| 1.2 kg |
| PR 6202/6t | 6 t | C1 \| C3 \| C4 \| C1E \| C3E \| C4E | 150 | > 300 | 240 × 240 × 155 mm | 2.1 kg \| 1.2 kg |
| PR 6202/10t | 10 t | C1 \| C3 \| C4 \| C1E \| C3E \| C4E | 150 | > 300 | 240 × 240 × 155 mm | 2.5 kg \| 1.6 kg |
| PR 6202/25t | 25 t | C1 \| C3 \| C4 \| C1E \| C3E \| C4E | 150 | > 300 | 240 × 240 × 155 mm | 3.7 kg \| 2.8 kg |
| PR 6202/50t | 50 t | C1 \| C3 \| C4 \| C1E \| C3E \| C4E | 150 | > 300 | 240 × 240 × 155 mm | 4.1 kg \| 3.2 kg |

For professional applications further options and a high number of additional mounting kits are available:

**Table PR 6002**

| Type | Description | Capacity | Weight shipping \| net | Order no. |
|---|---|---|---|---|
| PR 6002/00S | Top and bottom load disk | Load cells from 1 t...10 t | 1.2 kg \| 1.0 kg | 9405 360 02002 |
| PR 6002/01S | Top and bottom load disk | Load cells from 25 t...50 t | 1.5 kg \| 1.3 kg | 9405 360 02012 |
| PR 6002/02S | Mounting plate kit with top and bottom load disk | Load cells from 1 t...10 t | 4.5 kg \| 4.3 kg | 9405 360 02022 |
| PR 6002/03S | Mounting plate kit with top and bottom load disk | Load cells from 25 t...50 t | 4.8 kg \| 4.6 kg | 9405 360 02032 |
| PR 6002/04S | Mounting plate kit with top and bottom load disk, lift-off protection, fall-down protection, dummy function and displacement limiting by stop | Load cells from 1 t...10 t | 13.5 kg \| 13.2 kg | 9405 360 02042 |
| PR 6002/05S | Mounting plate kit with top and bottom load disk, lift-off protection, fall-down protection, dummy function and displacement limiting by stop | Load cells from 25 t...50 t | 13.7 kg \| 13.4 kg | 9405 360 02052 |
| PR 6002/10S | Mounting plate kit with top and bottom load disk, lift-off protection, fall-down protection, dummy function and displacement limiting by stop and protected by constrainer for horizontal forces up to 25 kN | Load cells from 1 t...10 t | 22.2 kg \| 21.8 kg | 9405 360 02102 |
| PR 6002/11S | Mounting plate kit with top and bottom load disk, lift-off protection, fall-down protection, dummy function, displacement limiting and protected by constrainer for horizontal forces up to 25 kN | Load cells from 25 t...50 t | 22.4 kg \| 22.0 kg | 9405 360 02112 |

**Fuhrter options**

| Type | Description | | Dimensions | Order no. |
|---|---|---|---|---|
| PR 6130/08 | Plastic cable junction box | for all industrial applications, max 8 load cells | 200 × 120 × 75 mm | 9405 361 30081 |
| PR 6130/04N | Cable junction box | Aluminium, grey printed, IP67 for all industrial applications, max. 4 load cells | 175 × 80 × 57 mm | 9405 361 30041 |
| PR 6130/64Sa | Stainless steel cable junction box | material stainless steel 1.4301, IP68, IP69K, for all cable junction box industrial applications, intrinsically safe and W&M applications, max. 4 load cells | 190 × 160 × 60 mm | 9405 361 30642 |
| PR 6130/65S | Stainless steel cable junction box | material stainless steel 1.4301, IP68, IP69K, for all cable junction box industrial applications, instrinsically safe and W&M applications, max. 4 load cells | 172 × 105 × 55 mm | 9405 361 30652 |
| PR 6130/68S | Stainless steel cable junction box | material stainless steel 1.4404, IP68, IP69K, for all cable junction box industrial applications, intrinsically safe and W&M applications, max. 8 load cells | 240 × 170 × 70 mm | 9405 361 30682 |
| PR 6135 | Extension cable, grey | for all applications | D = 9 mm | 9405 361 35..2 |
| PR 6135/..A | Extension cable, armoured, grey | for all applications | D = 13 mm | 9405 361 35..9 |
| PR 6136 | Extension cable, blue | for all applications | D = 11 mm | 9405 361 36..1 |
| PR 6136/..A | Extension cable, blue armoured, blue | for all applications | D = 13 mm | 9405 361 36..9 |

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