



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



1t... 50t, 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 1.5m 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 PR6202 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:

$E_{max} \leq 6t$: 0.65% of the actual load on the load cell

$E_{max} = 10t$: 0.76% of the actual load on the load cell

$E_{max} \geq 25t$: 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 column/10,000h.

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: 5mm, wires 4 x 0.35mm²

Length: 5m (up to 10t), 12m (from 25t)

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

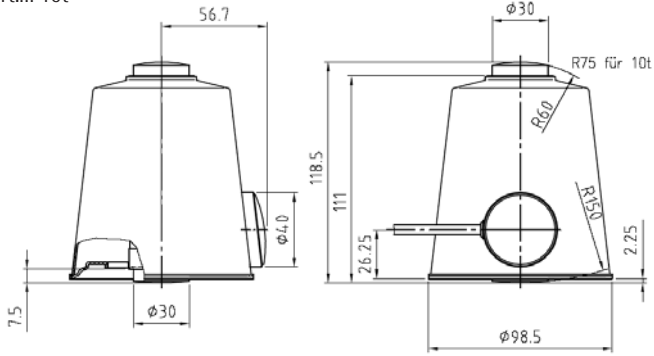
Technical Data			C1	C3	C4	
Accuracy class			0.03	0.015	0.012	% E_{max}
Minimum dead load	lowest limit of specified measuring range	E_{min}	0	0	0	% E_{max}
Rated capacity	highest limit of specified measuring range	E_{max}	s. table	s. table	s. table	
Max. usable load	upper limit of measurements	E_u	150	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, $v_{min} = E_{max}/Y$ for $E_{max} = 2t$ for $E_{max} = 1t$	Y	5,000 5,000 5,000	14,000 10,000 -	16,000 -	
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	ϵ_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 10K over B_T referred to C_n	TK_{Smin}	< 0.028	< 0.01	< 0.008	% $C_n/10K$
Temperature effect on C	max. change of C per 10K over B_T referred to C_n	TK_C	< 0.02	< 0.01	< 0.008	% $C_n/10K$

Technical Data			C1/C3/C4		
Input impedance	between supply terminals	R_{LC}	1,080 ± 10		Ω
Output impedance	between measuring terminals	R_o	1,010 ± 2		Ω
Insulation impedance	between measuring circuit and housing at 100V _{DC}	R_{IS}	> 5,000 x 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... +55		°C
Usable ambient temp. range	permissible for continuous operation without damage	B_{Tu}	-40... +95		°C
Storage temperature range	transportation 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)		20g, 100h/10... 150Hz		
Air pressure effect	influence of ambient air pressure on S_{min}	PK_{Smin}	1t... 10t: 190/25t... 50t: 390		g/kPa
Nominal deflection	max.elastic deformation under nominal load	S_{nom}	bis 6t: < 0.3/25t: 0.5/50t: 0.8		mm

Definitions acc. to VDI / VDE 2637

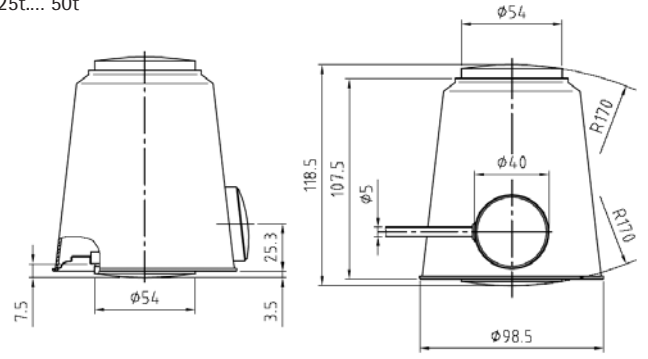
The technical data given here serve only as a product description and must not be interpreted as guaranteed characteristics in the legal sense.

1t... 10t

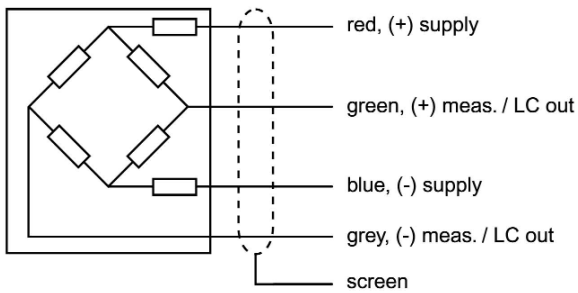


Dimensions in mm

25t... 50t



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
PR6202/1t	1t	C1/C1E	150	> 300	240 x 240 x 155mm	2.1kg/1.2kg
PR6202/2t	2t	C1/C3/C1E/C3E	150	> 300	240 x 240 x 155mm	2.1kg/1.2kg
PR6202/4t	4t	C1/C3/C4/C1E/C3E/C4E	150	> 300	240 x 240 x 155mm	2.1kg/1.2kg
PR6202/6t	6t	C1/C3/C4/C1E/C3E/C4E	150	> 300	240 x 240 x 155mm	2.1kg/1.2kg
PR6202/10t	10t	C1/C3/C4/C1E/C3E/C4E	150	> 300	240 x 240 x 155mm	2.5kg/1.6kg
PR6202/25t	25t	C1/C3/C4/C1E/C3E/C4E	150	> 300	240 x 240 x 155mm	3.7kg/2.8kg
PR6202/50t	50t	C1/C3/C4/C1E/C3E/C4E	150	> 300	240 x 240 x 155mm	4.1kg/3.2kg

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.
PR6002/00S	Top and bottom load disk	Load cells from 1t...10t	1.2 kg / 1.0 kg	9405 360 02002
PR6002/01S	Top and bottom load disk	Load cells from 25t...50t	1.5 kg / 1.3 kg	9405 360 02012
PR6002/02S	Mounting plate kit with top and bottom load disk	Load cells from 1t...10t	4.5 kg / 4.3 kg	9405 360 02022
PR6002/03S	Mounting plate kit with top and bottom load disk	Load cells from 25t...50t	4.8 kg / 4.6 kg	9405 360 02032
PR6002/04S	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 1t...10t	13.5 kg / 13.2 kg	9405 360 02042
PR6002/05S	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 25t...50t	13.7 kg / 13.4 kg	9405 360 02052
PR6002/10S	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 25kN	Load cells from 1t...10t	22.2 kg / 21.8 kg	9405 360 02102
PR6002/11S	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 25kN	Load cells from 25t...50t	22.4 kg / 22.0 kg	9405 360 02112

Fuhrter options

Type	Description		Dimensions	Order no.
PR6130/08	Plastic cable junction box	for all industrial applications, max 8 load cells	250 x 180 x 90mm	9405 361 30081
PR6130/04	Cable junction box	Aluminium, grey printed, IP68, IP69K, for all industrial applications, max. 4 load cells	175 x 80 x 57mm	9405 361 30041
PR6130/64S	Cable junction box	material stainless steel 1.4301, IP 68, IP69K, for all cable junction box industrial applications, intrinsically safe and W&M applications, max 4 load cells	195 x 160 x 58mm	9405 361 30642
PR6130/68S	Cable junction box	material stainless steel 1.4404, IP 68, for all cable junction box industrial applications, intrinsically safe and W&M applications, max 8 load cells	260 x 180 x 70mm	9405 361 30682
PR6135	Extension cable, grey	for all applications	D = 9mm	9405 361 35. . 2
PR6135/..A	Extension cable, armoured, grey	for all applications	D = 13mm	9405 361 35. . 9
PR6136	Extension cable, blue	for all applications	D = 11mm	9405 361 36. . 1
PR6136/..A	Extension cable, blue armoured, blue	for all applications	D = 13mm	9405 361 36. . 9