



sartorius

PR 6201 (100t... 300t) Precision Compression Load Cell



100t, 200t, 300t Type L/LA/N/NE

- Easy to install
- Well-proven rockerpin design
- Full stainless steel housing
- Wide temperature range
- High overload capacity
- Resistant against vibrations
- Hermetically sealed, IP 68 (depth of 1.5m for 10,000 hrs.), IP 69K
- 4 to 20mA output signal as option (LA version)
- Optimum overvoltage protection
- Ex-version available (PR 6201/..E)
- Easy corner adjustment by matched load cell output

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 blance 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, a horizontal restoring force is generated of: 100t: 1.2 % and 200/300t: 0.65 % of the applied vertical load

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

IP 68, IEC 529 (equivalent to NEMA 6). The load cell can be submerged in water to a depth of 1.5m for 10,000 hours, IP69K

Cable

Robust, flexible, screened
Sheath: TPE Thermopl. Elastomere, grey (for PR 6201/..E: blue)
Diameter: 5mm, wires 4 x 0,35mm²
Length: 12m

Bending radius:

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

Certificate of conformity

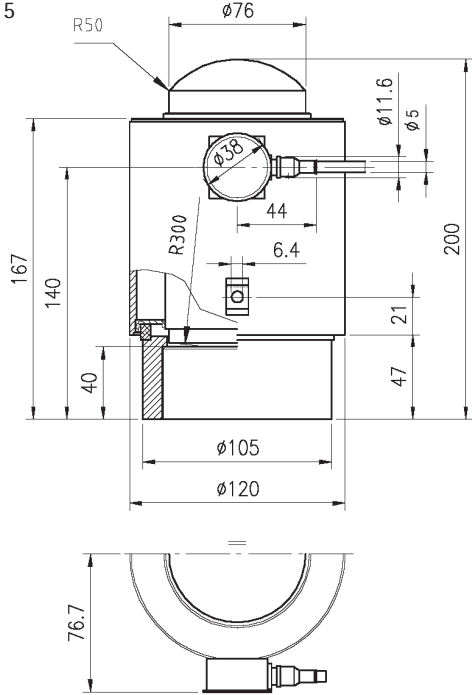
Valid for: PR 6201/..E
Feature:
II 1 G EEx ia IIC T6, II 1D IP65 T 85°C
Registration number:
PTB 02 ATEX 2059, TÜV 03 ATEX 2301x

Technical Data			LA	L	N/NE	
Accuracy class			0.5	0.5	0.06	% E _{max}
Minimum dead load	lowest limit of specified measuring range	E _{min}	0	0	0	% E _{max}
Maximum capacity	highest limit of specified measuring range	E _{max}	s. table	s. table	s. table	
Rated output	relative output at nominal load	C _n	16 mA	1.0	1.0 (300t: 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	ε _R	< 0.02	< 0.02	< 0.01	% C _n
Creep, during 30min.	max. change in load cell output under nominal load	d _{cr}	< 0.05	< 0.05	< 0.03	% C _n
Non-linearity	max. deviation from best straight line through zero	d _{lin}	< 0.3	< 0.3	< 0.05	% C _n
Hysteresis	max. difference in load cell output between loading and unloading	d _{hy}	< 0.25	< 0.25	< 0.06 (100t: < 0.04)	% C _n
Temperature effect on S _{min}	max. change of S _{min} /10K over B _T	TK _{Smin}	< 0.2	< 0.2	< 0.06	% C _n /10K
Temperature effect on C	max. change of C /10K over B _T	TK _c	< 0.1	< 0.1	< 0.03	% C _n /10K
Input impedance	between supply terminals	R _{IC}	–	650 + 50	650 ± 6	Ω
Output impedance	between measuring terminals	R _O	–	610 ± 3	610 ± 1	Ω
Insulation impedance	between measuring circuit and housing at 100V _{DC}	R _{IS}	–	> 5,000	> 5,000	MΩ
Insulation voltage	between circuit and housing (only Ex)		–	500	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	32	V
Nominal ambient temp. range	to hold the specified performance	B _T	-10... +55	-10... +55	-10... +55	° C
Usable ambient temp. range	permissible for continuous operation without damage	B _{Tu}	-30... +55	-40... +95	-40... +95	° C
Storage temperature range	transportation and storage	B _{Ts}	-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 oscillation (IEC 68-2-6 Fc)		–	20g, 100h, 10... 150Hz	20g, 100h, 20g, 100h, 10... 150Hz	
Air pressure effect	influence of ambient air pressure on S _{min}	PK _{Smin}				
	100t		700	700	700	g/kPa
	200t, 300t		1,400	1,400	1,400	g/kPa
Nominal deflection	max. elastic deformation under nominal load	S _{nom}				
	100t		< 1.0	< 1.0	< 1.0	mm
	200t		< 1.6	< 1.6	< 1.6	mm
	300t		< 2.4	< 2.4	< 2.4	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.

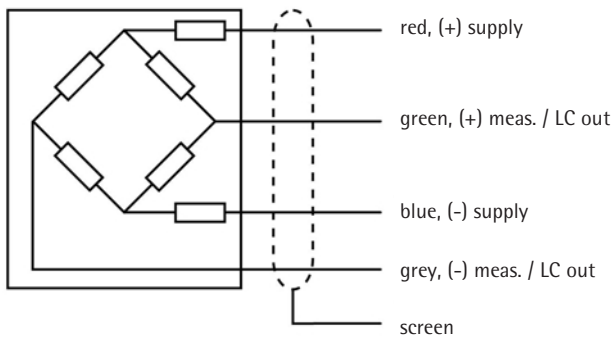
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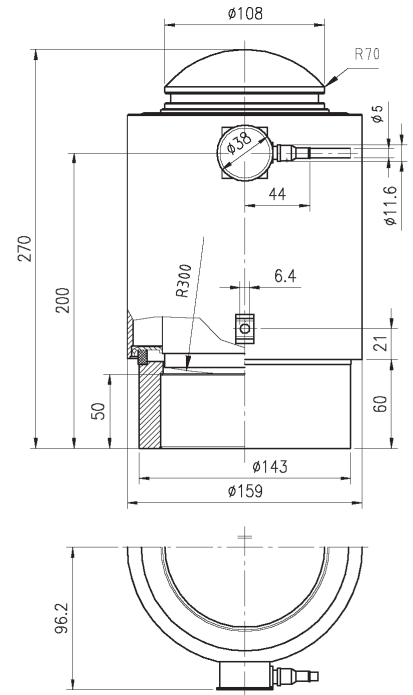
Dimensions in mm

Connection diagrams

PR 6201/ ...L, N, NE

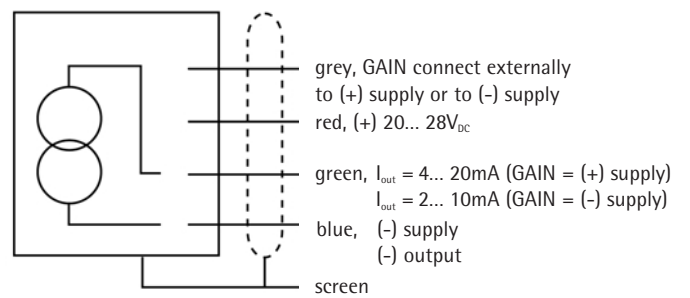


PR6201/25 .../35



Dimensions in mm

PR 6201/ ...LA



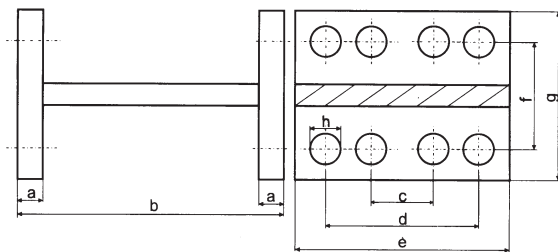
Order information

Type	Rated capacity E _{max}	Version	Max. usable load (in % of E _{max})	Destructive load (in % of E _{max})	Packing	Weight gross/net
PR6201/15	100t	LA, L, N, NE	200 (LA: 120)	> 500	280 x 280 x 350mm	12.9kg/11.2kg
PR6201/25	200t	LA, N, NE	200 (LA: 120)	> 500	340 x 350 x 470mm	29.0kg/26.0kg
PR6201/35	300t	N, NE	135	> 350	340 x 350 x 470mm	29.0kg/26.0kg

Further options

Type	Description		Dimensions	Order number
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 varnished, IP 68, for all industrial applications, max. 4 load cells	175 x 80 x 57mm	9405 361 30041
PR6130/64	Stainless steel cable junction box	material stainless steel 1.4301, IP 68, IP 69K for all industrial, intrinsically safe and W&M applications, max. 4 load cells	195 x 114 x 59mm	9405 361 30642
PR6130/68	Stainless steel cable junction box	material stainless steel 1.4404, IP 68, IP69k for all industrial, intrinsically safe and W&M applications, max. 8 load cells	200 x 160 x 60mm	9405 361 21682
PR6135	Extension cable	steel plates for all applications, grey	D = 9mm	9405 361 35. . 2
PR6135/..A	Extension cable, armoured	steel plates for all applications, grey	D = 13mm	9405 361 35. . 9
PR6136	Extension cable	for intrinsically safe applications, blue	D = 11mm	9405 361 36. . 2
PR6136/..A	Extension cable, armoured	for intrinsically safe applications, blue	D = 13mm	9405 361 36. . 9
PR6145/08N	Mounting kit	for 100t load cells		9405 361 45081
PR6145/10N	Mounting kit	for 200t and 300t load cells		9405 361 45101
PR6143/15N	Mounting kit	for 100t load cells, max. horizontal force 200kN		9405 361 43151
PR6143/25N	Mounting kit	for 200t and 300t load cells, max. horizontal force 200kN		9405 361 43251
PR6001/02N	Universal vessel foot	for 100t load cells		9405 360 01021
PR6001/03N	Universal vessel foot	for 200t and 300t load cells		9405 360 01031
PR6001/32	MaxiFLEXLOCK	for 100t load cells, max. horizontal force 200kN		9405 360 01321
PR6001/33	MaxiFLEXLOCK	for 200t + 300t load cells, max. horizontal force 200kN		9405 360 01331
PR6152/02	Horizontal constrainer	withstands horizontal forces up to 200kN		9405 361 52021
PR6101/15N	to use together with PR 6201 load cell	up to 100t Rated capacity		9405 561 01151
PR6101/25N	to use together with PR 6201 load cell	up to 300t Rated capacity		9405 561 01251

PR 6101/... Pivot



Type	Dimensions in mm							
	a	b	c	d	e	f	g	h
PR6101/15	30	290	49	145	300	95	130	18 (8x)
PR6101/25	40	385	185	375	450	135	180	24 (8x)