PR 6201 (500kg... 50t)
Precision Compression Load Cell

500kg... 50t Type LA/L/D1/C3

- Easy to install
- 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)
- Best overvoltage protection
- Ex-version available (PR 6201/..E)

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 counterbalance movements arising from mechanical or thermal expansion or contraction of the vessel or its supporting construction.
A particular design characteristic is that the overall height and shape of the load cell remain unchanged, even after two decades of use. 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 enable 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 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 the use of a reference weight. 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 displacement, that the top of the load cell is shifted from the vertical axis, a horizontal restoring force of 0.5% of the applied load is generated.

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, IEC529 (equivalent to NEMA 6). The load cell can be submerged in water to a depth of 1.5m for 10,000 hours.

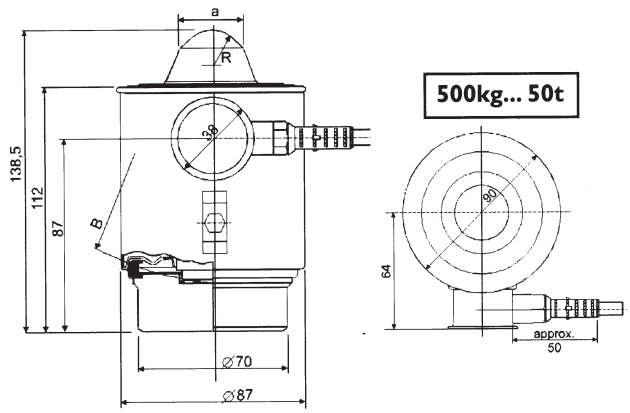
Cable
Robust, flexible, screened
Sheath: TPE Thermopl. Elastomere, grey (for PR 6201/..E: blue)
Diameter: 5mm, wires 4 x 0,35mm²
Length: 5m (500kg - 10t), 12m (20t – 50t)

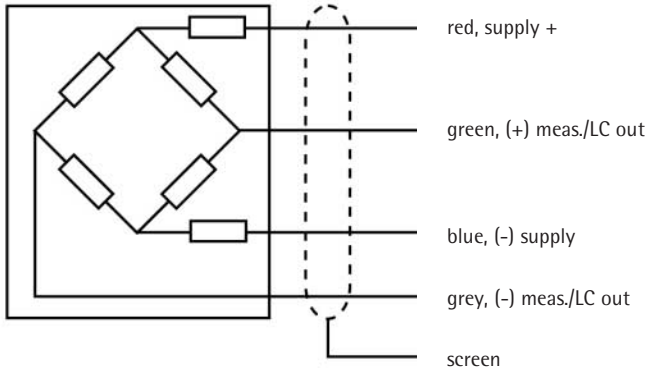
Bending radius
Fixed installation: ≥ 50mm
Flexible installation: ≥ 150mm

Certificate of conformity
Valid for: PR 6201/..E
Feature:
EEx ib IIC T6 / CE 0102 II 1 G EEx ia IIC T6
Registration number:
PTB Nr. Ex-92.C.2137 / PTB 02 ATEX 2059

Technical Data			**LA**	**L**	**D1**	**C3**	
Accuracy class			0,25	0,25	0,04	0,015	% E_{max}
Minimum dead load	lowest limit of specified measuring range	E_{min}	0	0	0	0	% E_{max}
Maximum capacity	highest limit of specified measuring range	E_{max}	s. table	s. table	s. table	s. table	
Minimum LC verification	minimum load cell verification interval, $v_{min} = E_{max}/Y$ interval for E_{max} = 1,000kg for E_{max} = 500kg	 Y Y Y			 5.000 4.000 2.000	 14.000	
Rated output	relative output at nominal load for E_{max} = 50t	C_n C_n	16mA 16mA	1 2	1 2	1 2	mV/V mV/V
Tolerance on rated output	permissible deviation from rated output	d_c	< 1.0	< 1.0	< 0.25	< 0.07	% C_n
Zero output signal	load cell output signal under unloaded condition	S_{min}	4mA	< 2.0	< 1.0	< 1.0	% C_n
Repeatability error	max. change in load cell output for repeated loading	ε_R	< 0.02	< 0.02	< 0.01	< 0.005	% C_n
Creep, during 30 min.	max. change in load cell output under nominal load	d_{cr}	< 0.05	< 0.05	< 0.03	< 0.015	% C_n
Non-Linearity	max. deviation from best straight line through zero	d_{Lin}	< 0.25	< 0.25	< 0.03	< 0.01	% C_n
Hysteresis	max. difference in load cell output when loading from	d_{hy}	< 0.25	< 0.25	< 0.04	< 0.015	% C_n
Temperature effect on S_{min}	max. change of S_{min}/10K DT over B_T referred to C_n	TK_{Smin}	< 0.15	< 0.15	< 0.028	< 0.01	% C_n/10K
Temperature effect on C	max. change of C /10K DT over B_T referred to C_n	TK_c	< 0.1	< 0.1	< 0.03	< 0.01	% C_n/10K
Input impedance	between supply terminals	R_{LC}	–	650 + 50	650 ± 6	650 ± 6	Ω
Output impedance	between measuring terminals	R_0	–	610 ± 3	610 ± 1	610 ± 0,5	Ω
Insulation impedance	between measuring circuit and housing at $100V_{DC}$	R_{IS}	–	> 5,000	> 5,000	> 5,000	MΩ
Insulation voltage	between circuit and housing, PR 6201/..E only		-	500	500	500	V
Recommended supply voltage	to hold the specified performance	B_u	20... 28	4... 24	4... 24	4... 24	V
Max. supply voltage	permissible for continuous operation without damage	U_{max}	28	32	32	32	V
Nominal ambient temp. range	to hold the specified performance	B_T	-10... +55	-10... +55	-10... +55	-10... +55	° C
Usable ambient temp. range	permissible for continuous operation without damage	B_{Tu}	-40... +55	-40... +95	-40... +95	-40... +95	° C
Storage temperature range	Transportation and storage	B_{Tl}	-40... +70	-40... +85	-40... +85	-40... +95	° C
Permissible eccentricity	permissible displacement from nominal load line	S_{ex}	10	10	10	10	mm
Vibration resistance	resistance against oscillation (IEC 68-2-6 Fc)	-	20g, 100h, 10... 150Hz	20g, 100h, 10... 150Hz	20g, 100h, 10... 150Hz	20g, 100h, 10... 150Hz	
Air pressure effect	influence of ambient air pressure on S_{min}	PK_{Smin}	bis 2t: 250 3t bis 10t: 320 ab 20t: 420	bis 2t: 250 3t bis 10t: 320 ab 20t: 420	bis 2t: 250 3t bis 10t: 320 ab 20t: 420	bis 2t: 250 3t bis 10t: 320 ab 20t: 420	g/kPa
Nominal deflection	max. elastic deformation under nominal load	s_{nom}	bis 30t < 0,5 50t < 0,8	bis 30t < 0,5 50t < 0,8	bis 30t < 0,5 50t < 0,8	bis 30t < 0,5 50t < 0,8	mm

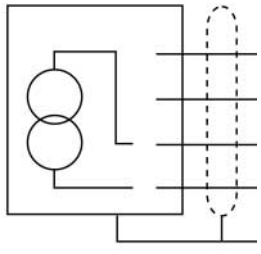
Definitions acc. to VDI / VDE 2637
Data for LA version are typical values. The technical data given here serve only as a product description and must not be interpreted as guaranteed characteristics in the legal sense.





Dimensions in mm

PR 6201/52.../23	a = 24	R = 15	B = 150
PR 6201/33.../14	a = 34	R = 15	B = 150
PR 6201/24.../54	a = 56	R = 35	B = 220



Order information

Type	Nominal Load E_{max}	Version	Max. usable load (in % of E_{max})	Destructive load (in % of E_{max})	Packing	Weight gross/net
PR6201/52	500kg	LA/L/D1/D1E	(LA:120) 200	> 500	240 x 240 x 155mm	2,8kg/1,9kg
PR6201/13	1t	LA/L/D1/D1E	(LA:120) 200	> 500	240 x 240 x 155mm	2,8kg/1,9kg
PR6201/23	2t	LA/L/D1/C3/D1E/C3E	(LA:120) 200	> 500	240 x 240 x 155mm	2,8kg/1,9kgg
PR6201/33	3t	LA/L/D1/C3/D1E/C3E	(LA:120) 200	> 500	240 x 240 x 155mm	2,9kg/2,0kg
PR6201/53	5t	LA/L/D1/C3/D1E/C3E	(LA:120) 200	> 500	240 x 240 x 155mm	2,9kg/2,0kg
PR6201/14	10t	LA/L/D1/C3/D1E/C3E	(LA:120) 200	> 500	240 x 240 x 155mm	3,4kg/2,5kg
PR6201/24	20t	LA/L/D1/C3/D1E/C3E	(LA:120) 200	> 500	240 x 240 x 155mm	5,1kg/4,2kg
PR6201/34	30t	LA/D1/C3/D1E/C3E	(LA:120) 200	> 500	240 x 240 x 155mm	5,5kg/4,6kg
PR6201/54	50t	LA/L/D1/C3/D1E/C3E	(LA:120) 150	> 300	240 x 240 x 155mm	5,1kg/4,2kg

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

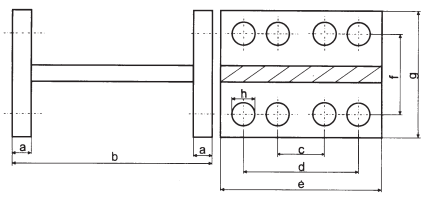
Table PR 6001

Type	Description		Weight net	tare	Order number
PR6001/00N	Universal vessel support	500kg... 10t	10.1kg	10.4kg	9405 360 01001
PR6001/00S	Universal vessel support, stainless steel	500kg... 10t	10.9kg	11.2kg	9405 360 01002
PR6001/01N	Universal vessel support	20t... 50t	10.1kg	10.4kg	9405 360 01011
PR6001/01S	Universal vessel support, stainless steel	20t... 50t	10.9kg	11.2kg	9405 360 01012
PR6001/10N	25kN MaxiFLEXLOCK	500kg... 10t	15.9kg	16.5kg	9405 360 01101
PR6001/10S	25kN MaxiFLEXLOCK, stainless steel	500kg... 10t	16.7kg	17.3kg	9405 360 01102
PR6001/11N	25kN MaxiFLEXLOCK	20t... 50t	15.9kg	16.5kg	9405 360 01111
PR6001/11S	25kN MaxiFLEXLOCK, stainless steel	20t... 50t	16.7kg	17.3kg	9405 360 01112
PR6001/20N	50kN MaxiFLEXLOCK	500kg... 10t	25.0kg	25.6kg	9405 360 01201
PR6001/20S	50kN MaxiFLEXLOCK, stainless steel	500kg... 10t	25.8kg	26.4kg	9405 360 01202
PR6001/21N	50kN MaxiFLEXLOCK	20t ... 50t	25.0kg	25.6kg	9405 360 01211
PR6001/21S	50kN MaxiFLEXLOCK, stainless steel	20t... 50t	25.8kg	26.4kg	9405 360 01212
PR6001/30N	200kN MaxiFLEXLOCK	500kg... 10t	138kg	143kg	9405 360 01301
PR6001/31N	200kN MaxiFLEXLOCK	20t... 50t	138kg	143kg	9405 360 01311

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 printed, 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, for all industrial, applications, max. 8 load cells	200 x 160 x 60mm	9405 361 21682
PR6135	Extension cable	for all applications	D = 9mm	9405 361 35. . 2
PR6135/...A	Extension cable, armoured	for all applications	D = 11mm	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 = 11mm	9405 361 36. . 9
PR6143/50N	Loaddisk	normal version for 0.5 up to 50t		9405 361 43501
PR6143/50S	Stainless steel Loaddisk	material 1.4542 (DIN 17440) for 0.5 up to, 50t		9405 361 43502
PR6143/24S	Stainless steel Bottomdisk	material 1.4542 (DIN 17440) for PR 6201 up to 10t nominal load		9405 361 43242
PR6143/54S	Stainless steel Bottomdisk	material 1.4542 (DIN 17440) for PR 6201 20t, 30t or 50t nominal load		9405 361 43542
PR6145/00N	Mounting kit	steel plates to mount all PR 6201 up to 50t nominal load		9405 361 45001
PR6145/00S	Stainless steel Mounting kit	material 1.4301, for 20t D1, 20t C3, 30t or 50t nominal load order PR 6143/54S separately		9405 361 45002
PR6143/00N	Mini Flexlock	mounting plate kit with built in constrainer up to 25kN horizontal forces		9405 361 43001
PR6143/00S	Stainless steel Mini Flexlock	material 1.4301, up to 20 t nominal load and up to 25kN horizontal forces		9405 361 43002
PR6143/10N	Flexlock	stronger version with built in constrainer up to 50kN horizontal forces		9405 361 43101
PR6143/10S	Stainless steel Mini Flexlock	material 1.4301, up to 50t nominal load and up to 50kN horizontal forces		9405 361 43102
PR6152/02	Horizontal constrainers	withstands horizontal forces up to 200kN		9405 361 52021

PR 6101/... Pivot



Type	Dimensions in mm							
	a	b	c	d	e	f	g	h
PR6101/53	15	190,5	–	115	150	965	100	14 (4x)
PR6101/24	15	190,5	–	115	150	965	100	14 (4x)
PR6101/54	15	190,5	115	195	250	965	100	14 (8x)

Table for the possible pivots to use together with PR 6201 load cell

Type	Description		Order number
PR6101/53N	normal steel	up to 5t nominal load	9405 561 01531
PR6101/53S	stainless steel		9405 561 01532
PR6101/24N	normal steel	up to 20t nominal load	9405 561 01241
PR6101/24S	stainless steel		9405 561 01242
PR6101/54N	normal steel	up to 50t nominal load	9405 561 01541
PR6101/54S	stainless steel		9405 561 01542

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