

# PR 6211

## Compact Compression Load Cell



30kg... 10t Type D1  
500kg... 5t Type LT

- Easy to install in limited space
- Easy corner adjustment by matched D1 load cell outputs
- Full stainless steel construction
- Wide temperature range
- Resistant against vibration
- Hermetically sealed, IP 68 (depth of 1.5m for 10,000 hrs.), IP 69K
- Ex-version available (500kg... 10t)
- W&M approval (acc. OIML R 60)
- Integrated overload protection for up to 300kg capacity

### Product Profile

The PR 6211 range of load cells is specially designed for weighing silos, tanks and process vessels.

The unique design principle facilitates a particularly compact construction and, as a result, the unit can be used even in restricted space conditions.

The FlexLock installation kits counterbalance movements arising from mechanical or thermal expansion or contraction of the vessel or its supporting construction.

A particular design characteristic of some models is the thin-film or "splutter" technology. This enables an operating temperature of up to 180°C to be reached. In addition, the small construction has integrated overload protection of 500kg.

At the same time, this range distinguishes itself above all for its unmatched reliability, robustness and stability, which enable trouble-free operation without adjustment, year after year.

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.

Load cell construction

Hermetically sealed, welded stainless steel construction, filled with polyurethane and inert gas.

Material

1.4542 (DIN 17440) acc. to S604, S622 (B.S.)

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, IP 69K

Cable

Robust, flexible, screened  
TPE thermoplastic Elastomere  
Sheath: grey  
PR 6211/..D1E, Colour: blue  
PR 6211 LT: PFA Thermoplastic, Colour: red  
Diameter: 5mm, wires 4 x 0,35mm<sup>2</sup>  
PR6211/30... 300kg: 3mm, 4 x 0,13mm<sup>2</sup>  
Length : 5m  
PR6211/30... 300kg: 3m

Bending radius

Fixed installation ≥ 50mm  
Flexible installation ≥ 150mm

Certificate of conformity

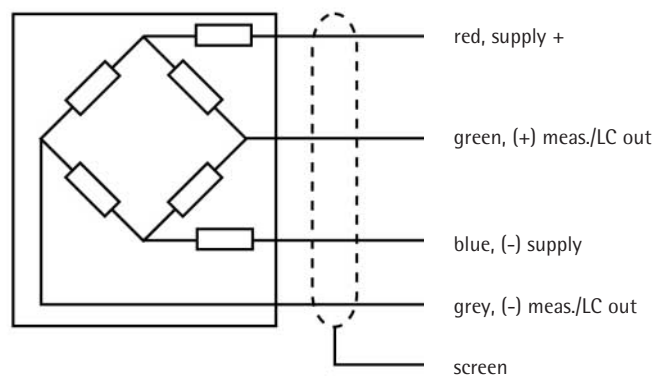
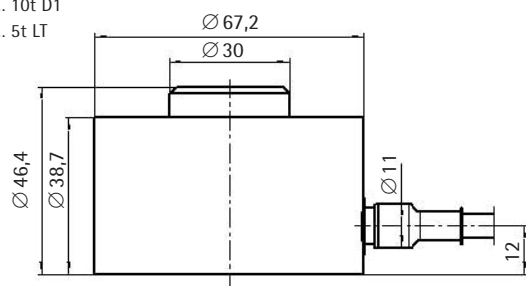
Valid for:  
PR 6211/... D1E (500kg... 10t)  
Feature:  
II 1G EEx ia IIC T6, II 1D IP65 85°C  
Registration number:  
PTB 02 ATEX 2059, TÜV 03 ATEX 2301x

Technical Data

			LT	D1	D1	
			500kg... 5t	30... 300kg	500kg... 10t	
Accuracy class			0,25	0,05	0,04	% E <sub>max</sub>
Minimum dead load	lowest limit of specified measuring range	E <sub>min</sub>	0	0	0	% E <sub>max</sub>
Maximum capacity	highest limit of specified measuring range	E <sub>max</sub>	s. Tabelle	s. Tabelle	s. Tabelle	
Max. usable load	upper limit for measurements	E <sub>u</sub>	150	150	150	% E <sub>max</sub>
Max. load without damage	highest limit without irreversible effects	E <sub>L</sub>	-	500	-	kg
Destructive load	danger of mechanical destruction	E <sub>d</sub>	> 300	-	> 300	% E <sub>max</sub>
Max. side load	highest limit of static load in the horizontal direction	E <sub>lq</sub>	5	2	5	kN
Min. LC verification interval	minimum load cell verification interval, v <sub>min</sub> = E <sub>max</sub> /Y E <sub>max</sub> = 30kg	Y	-	3,333	5,000	
		Y	-	2,500	-	
Rated output	relative output at nominal load	C <sub>n</sub>	2.0	2.0	2.0	mV/V
Tolerance on rated output	permissible deviation from rated output	d <sub>c</sub>	< 0.25	< 0.25	< 0.25	% C <sub>n</sub>
Zero output signal	load cell output signal under unloaded condition	S <sub>min</sub>	< 0... 2	< 0... 2	< 0... 2	% C <sub>n</sub>
Repeatability error	max. change in load cell output for repeated loading	ε <sub>R</sub>	< 0.1	< 0.01	< 0.01	% C <sub>n</sub>
Creep, during 30 min.	max. change in load cell output under nominal load	d <sub>cr</sub>	< 0.1	< 0.03	< 0.035	% C <sub>n</sub>
Non-Linearity	max. deviation from best straight line through zero	d <sub>lin</sub>	< 0.25	< 0.05	< 0.03	% C <sub>n</sub>
Hysteresis	max. difference in load cell output when loading from zero to nominal load and unloading back to zero	d <sub>hy</sub>	< 0.25	< 0.05	< 0.04	% C <sub>n</sub>
Temperature	max. change of S <sub>min</sub> /10K DT over B <sub>T</sub> referred to C <sub>n</sub> effect S <sub>min</sub>	TK <sub>Smin</sub>	< 0.1	< 0.042	< 0.028	% C <sub>n</sub> /10K
Temperature effect C	max. change of C/10K DT over B <sub>T</sub> referred to C <sub>n</sub>	TK <sub>c</sub>	< 0.07	< 0.03	< 0.03	% C <sub>n</sub> /10K
Input impedance	between supply terminals	R <sub>LC</sub>	1,200 ± 200	1,300 ± 12	650 ± 6	Ω
Output impedance	between measuring terminals	R <sub>o</sub>	1,200 ± 6	1,200 ± 2	610 ± 1	Ω
Insulation impedance	between measuring circuit and housing	R <sub>is</sub>	> 5,000	> 5,000	> 5,000	Ω
Insulation voltage	between circuit and housing, special for PR 6211/..D1E	-	-	-	500	V
Recommended supply voltage	to hold the specified performance	B <sub>u</sub>	4... 24	4... 24	4... 24	V
Max. supply voltage	permissible for continuous operation without damage	U <sub>max</sub>	25	25	25	V
Nominal ambient temp. range	to hold the specified performance	B <sub>T</sub>	-10... +155	-10... +85	-10... +55	° C
Usable ambient temp. range	permissible for continuous operation without damage	B <sub>Tu</sub>	-40... +180	-40... +95	-40... +95	° C
Storage temperature range	Transportation and storage	B <sub>Tl</sub>	-40... +180	-40... +95	-40... +95	° C
Permissible eccentricity	permissible displacement from nominal load line	S <sub>ex</sub>	3	3	3	mm
Vibration resistance	resistance against oscillation (IEC 68-2-6 Fc)	-	20g, 100h, 10... 150Hz	20g, 100h, 10... 150Hz	20g, 100h, 10... 150Hz	
Air pressure effects	influence of ambient air pressure on S <sub>min</sub>	PK <sub>Smin</sub>	≤ 70	≤ 12	≤ 60	g/kPa
Nominal deflection	max. elastic deformation under nominal load	S <sub>nom</sub>	up to 10t < 0.2	up to 300kg < 0.1/	up to 10t < 0.2	mm

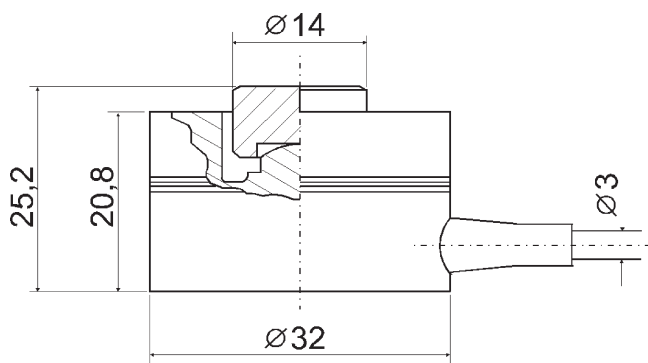
Definitions acc. to VDI / VDE 2637  
The technical data given here serve only as a product description and must not be interpreted as guaranteed characteristics in the legal sense.

Compact compression Load cell  
500kg... 10t D1  
500kg... 5t LT



Dimensions in mm

Compact compression Load cell 30kg... 300kg



Dimensions in mm

#### Order information

Type	Nominal Load $E_{max}$ (2mV/V)	Version	Packing	Weight gross/net
PR6211/31..	30kg	/..D1	240 x 175 x 80mm	0,31kg/0,14kg
PR6211/51..	50kg	/..D1	240 x 175 x 80mm	0,31kg/0,14kg
PR6211/12..	100kg	/..D1	240 x 175 x 80mm	0,31kg/0,14kg
PR6211/22..	200kg	/..D1	240 x 175 x 80mm	0,31kg/0,14kg
PR6211/32..	300kg	/..D1	240 x 175 x 80mm	0,31kg/0,14kg
PR6211/52	500kg	/..LT /..D1/..D1E	250 x 230 x 60mm	1,3kg/1,0kg
PR6211/13..	1t	/..LT/..D1/..D1E	250 x 230 x 60mm	1,3kg/1,0kg
PR6211/23..	2t	/..LT/..D1/..D1E	250 x 230 x 60mm	1,3kg/1,0kg
PR6211/33..	3t	/..LT/..D1/..D1E	250 x 230 x 60mm	1,3kg/1,0kg
PR6211/53..	5t	/..LT/..D1/..D1E	250 x 230 x 60mm	1,3kg/1,0kg
PR6211/14..	10t	/..D1/..D1E	250 x 230 x 60mm	1,3kg/1,0kg

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 painted, 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, 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
PR6011/10N	Mounting kit	steel plates to mount all PR 6211 / 500kg... 10t nominal load		9405 360 11101
PR6011/10S	Stainless steel mounting kit	stainless steel version of PR 6011/10N		9405 360 11102
PR6011/30N	MiniFlexlock	mounting kit for PR 6211 500kg... 10t with built in constrainer up to 5kN horizontal forces		9405 360 11301
PR6011/30S	Stainless steel MiniFlexlock	stainless steel version of PR 6011/30N		9405 360 11302
PR6011/40N	SeismoFlex	mounting kit for 6211 500kg... 10t with built in constrainer up to 20 kN side forces and lift-off-protection		9405 360 11401
PR6011/40S	Stainless steel SeismoFlex	stainless steel version of PR 6011/40N		9405 360 11402
PR6011/11N	Mounting kit	mounting plate for all load cells PR6211/500kg to 10t nominal load, Material 1.4301		9405 360 11111
PR6011/11S	Mounting kit Stainless steel	mounting plate for all load cells PR6211/500kg to 10t nominal load, material 1.4301		9405 360 11112
PR6011/00N	Mounting kit	steel plate kit to mount PR 6211 30kg... 300kg		9405 360 11001
PR6011/00S	Stainless steel mounting kit	stainless steel version of PR 6011/00N		9405 360 11002
PR6011/03	Rubber mounting kit	vibration absorbent rubber with steel plates for mounting on PR 6011/00N and PR 6011/20N		9405 360 11031
PR6011/20N	MiniFlexlock	mounting kit for PR 6211 30 kg... 300kg with build in constrainer up to 450N horizontal forces		9405 360 11201
PR6011/20S	Stainless steel MiniFlexlock	stainless steel version of PR 6011/20N		9405 360 11202