



# PR 6241

## Compression S-Type Load Cell



100kg... 5t, Typ D1/C3/C6

- Easy to install
- Easy corner adjustment by matched 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.)
- Ex-version available
- W & M approval (According to OIML R60)

### Product Profile

The PR 6241 range of load cells is specially designed for weighing small and medium-sized process vessels and for high-precision dosing.

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.

The load cell is manufactured entirely from stainless steel. A particular design characteristic is the combination of "genuine" shear force and pendulum support principles, which make for unrivalled accuracy.

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. With the associated installation kit, the pendulum support principle ensures that force transmission into the sensor is always at the optimum level and, in this way, the effect on measurement accuracy is minimized, whilst high repeatability and perfect linearity are maintained.

There is a particularly 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.

**Load cell construction**

S-shape design with integrated load return.  
Full stainless steel construction, hermetically sealed, welded, filled with inert gas.

**Material**

Load cell: 1.4542 (DIN 17440) similar to S604, S622 (B.S.), 17 - 4PH

**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.

**Cable**

Robust, flexible, screened  
Sheath: TPE Thermopl. Elastomere,  
Colour: grey (EX: blue)  
Diameter: 5 mm, wires 4 x 0.35 mm<sup>2</sup>  
Length: 5 m

**Bending radius**

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

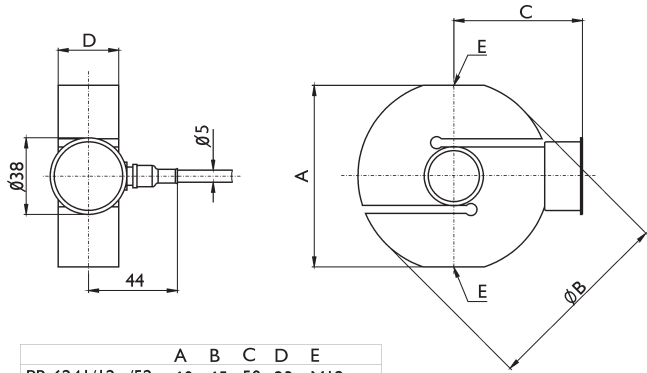
**Certificate of conformity PR 6241/..E**

Feature:  
II 1G EEx ia IIC T6, II 1D IP65 85°C  
Registration number:  
PTB 02 ATEX 2059, TÜV 03 ATEX 2301x

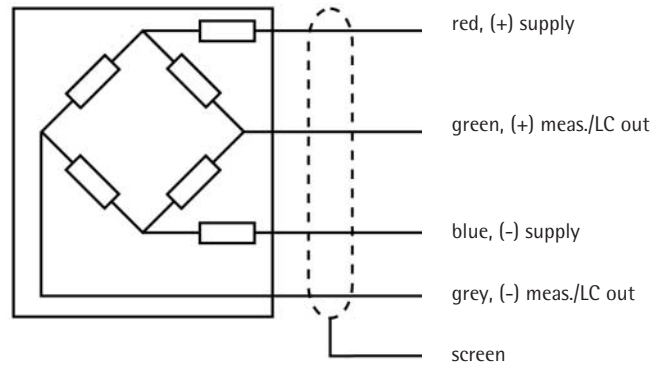
Technical Data			D1	C3	C6	
Accuracy class			0.04	0.015	0.008	% E <sub>max</sub>
Minimum dead load	lowest limit of specified measuring range	E <sub>min</sub>	0	0	0	% E <sub>max</sub>
Maximum capacity	highest limit of specified measuring range	E <sub>max</sub>	s.table	s.table	s.table	
Max. usable load	upper limit for measurements	E <sub>u</sub>	150	150	150	% E <sub>max</sub>
Destructive load	danger of mechanical destruction	E <sub>d</sub>	> 300	> 300	> 300	% E <sub>max</sub>
Min. LC verification interval	minimum load cell verification interval, (v <sub>min</sub> =E <sub>max</sub> /Y)	Y	5,000	14,000	20,000	
Rated output	relative output at nominal load	C <sub>n</sub>	2	2	2	mV/V
Tolerance on rated output	permissible deviation from rated output	d <sub>c</sub>	< 0.25	< 0.07	< 0.07	% C <sub>n</sub>
Zero output signal	load cell output signal under unloaded condition	S <sub>min</sub>	< 1.0	< 1.0	< 1.0	% C <sub>n</sub>
Repeatability error	max. change in load cell output for repeated loading	ε <sub>R</sub>	< 0.01	< 0.005	< 0.005	% C <sub>n</sub>
Creep, during 30 min.	max. change in load cell output under nominal load	d <sub>cr</sub>	< 0.03	< 0.015	< 0.008	% C <sub>n</sub>
Non - Linearity	max. deviation from best straight line through zero	d <sub>lin</sub>	< 0.03	< 0.01	< 0.01	% 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>	< 0.04	< 0.015	< 0.008	% C <sub>n</sub>
Temperature effect on S <sub>min</sub>	max. change of S <sub>min</sub> /10K DT over B <sub>T</sub> referred to C <sub>n</sub>	TK <sub>Smin</sub>	< 0.028	< 0.01	< 0.007	% C <sub>n</sub> /10K
Temperature effect on C	max. change of C /10K DT over BT referred to C <sub>n</sub>	TK <sub>c</sub>	< 0.03	< 0.01	< 0.005	% C <sub>n</sub> /10K
Input impedance	between supply terminals	R <sub>LC</sub>	650 ± 6	650 ± 6	650 ± 6	Ω
Output impedance	between measuring terminals	R <sub>o</sub>	610 ± 1	610 ± 0.5	610 ± 0.5	Ω
Insulation impedance	between measuring circuit and housing 100V <sub>DC</sub>	R <sub>IS</sub>	> 5,000	> 5,000	> 5,000	MΩ
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... +55	-10... +55	-10... +55	° C
Usable ambient temp. range	permissible for continuous operation without damage	B <sub>Tu</sub>	-40... +95	-40... +95	- 40... +95	° C
Storage temperature range	Transportation and storage	B <sub>Tl</sub>	-40... +95	-40... +95	-40... +95	° C
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>	0.005	0.0025	0.0025	% C <sub>n</sub> /kPa
Nominal deflection	max. elastic deformation under nominal load	S <sub>nom</sub>	< 0.5	< 0.3	< 0.3	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.



	A	B	C	D	E
PR 6241/12.../52	60	65	50	23	M12
PR 6241/13.../23	60	65	50	30	M12
PR 6241/33	90	95	64	30	M20x1.5
PR 6241/53	90	95	64	35	M20x1.5



Dimensions in mm

#### Order information

Type	Nominal Load $E_{max}$	Version	Ex-Version	Packing	Weight gross/net
PR6241/12..	100kg	/..D1	/..D1E	220 x 215 x 135mm	1.2kg/0.8kg
PR6241/22..	200kg	/..D1/..C3/..C6	/..D1E/..C3E/C6E	220 x 215 x 135mm	1.2kg/0.8kg
PR6241/32..	300kg	/..D1/..C3/..C6	/..D1E/..C3E/C6E	220 x 215 x 135mm	1.2kg/0.8kg
PR6241/52..	500kg	/..D1/..C3/..C6	/..D1E/..C3E/C6E	220 x 215 x 135mm	1.2kg/0.8kg
PR6241/13..	1t	/..D1/..C3/..C6	/..D1E/..C3E/C6E	220 x 215 x 135mm	1.2kg/0.9kg
PR6241/23..	2t	/..D1/..C3/..C6	/..D1E/..C3E/C6E	220 x 215 x 135mm	1.2kg/0.9kg
PR6241/33..	3t	/..D1/..C3/..C6	/..D1E/..C3E/C6E	220 x 215 x 135mm	2.0kg/1.7kg
PR6241/53	5t	/..D1/..C3	/..D1E/..C3E	220 x 215 x 135mm	2.2kg/1.9kg

Type	Further options		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 1.4301 + IP 68, IP 69k, for all industrial, intrinsically safe, W&M applications	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
PR6041/51S	Stainless steel platform foot	material 1.4542, special mounting solution for platform	(100kg... 2t load cells)	9405 360 41512
PR6041/30N	Plate mounting kit	mild steel, zinc plated, without constraining	(100kg... 2t load cells)	9405 360 41301
PR6041/30S	Stainless steel plate mounting kit	material 1.4301, stainless steel, without constraining	(100kg... 2t load cells)	9405 360 41302
PR6041/40N	Plate mounting kit	mild steel, zinc plated, without constraining	(3t, 5t load cells)	9405 360 41401
PR6041/40S	Stainless steel plate mounting kit	material 1.4301, without constraining	(3t, 5t load cells)	9405 360 41402
PR6143/80N	Pivoting rod	up to 2 kN horizontal force, mild steel, zinc plated		9405 361 43801
PR6143/83N	Pivoting rod	up to 20 kN horizontal force, mild steel, zinc plated		9405 361 43831
PR6043/30N	MiniFlexlock	mounting kit, incl. constrainer up to 6kN horiz. force	(100kg... 2t load cells)	9405 360 43301
PR6043/30S	Stainless steel MiniFlexlock	material 1.4301, mounting kit, incl. constrainer up to 6kN horiz. force	(100kg... 2t load cells)	9405 360 43302
PR6043/31S	Stainless steel loadbutton set	material 1.4542, special load button set	(100kg... 2t load cells)	9405 360 43312
PR6043/40N	MiniFlexlock	mounting kit, incl. constrainer up to 18kN horiz. force	(3t, 5t load cells)	9405 360 43401
PR6043/40S	Stainless steel MiniFlexlock	material 1.4301, mounting kit, incl. constrainer up to 13kN horiz. force	(3t, 5t load cells)	9405 360 43402