



sartorius

PR 6246

## Tension S-Type Load Cell



100kg... 3t, Type 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.), IP 69K
- Ex-version available
- W & M approval (acc. to OIML R 60)

### Product Profile

The PR 6246 range of load cells is specially designed for high-precision weighing of process vessels and for high-precision dosing. Due to the fact that the container is suspended, movements arising from mechanical or thermal expansion or contraction of the vessel or its supporting construction can be counterbalanced.

The load cell is manufactured entirely from stainless steel. A particular design characteristic is the compact construction with a high overload range of up to 150% and the highest accuracy class of up to C6.

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 associated installation kit ensures that the transmission of force 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.), 17-4 PH

**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

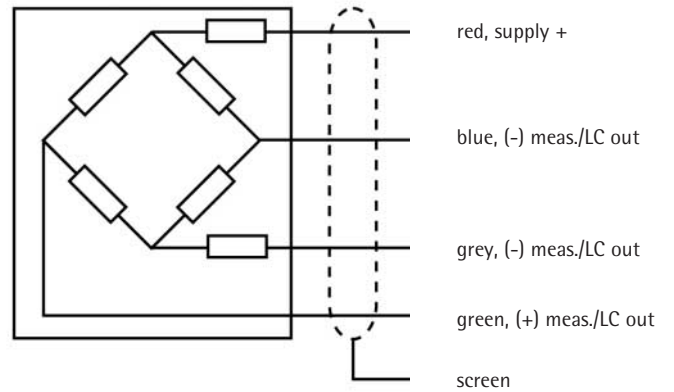
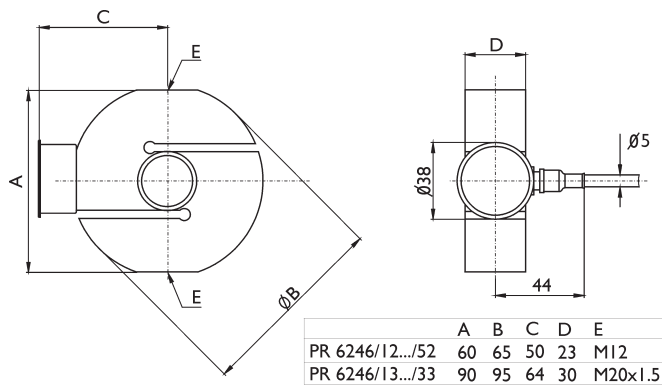
**Certificate of conformity**

Valid for: PR 6246/..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. L <sub>c</sub> 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 B <sub>T</sub> 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 supply voltage	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>Tn</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>	< 0.3	< 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.



Dimensions in mm

### Order information

Type	Nominal Load $E_{max}$	Version	Ex-Version	Packing	Weight gross/net
PR 6246/12..	100kg	/..D1	/..D1E	220 x 215 x 135mm	1.2kg/0.8kg
PR 6246/22..	200kg	/..D1/..C3/..C6	/..D1E/..C3E/C6E	220 x 215 x 135mm	1.2kg/0.8kg
PR 6246/32..	300kg	/..D1/..C3/..C6	/..D1E/..C3E/C6E	220 x 215 x 135mm	1.2kg/0.8kg
PR 6246/52..	500kg	/..D1/..C3/..C6	/..D1E/..C3E/C6E	220 x 215 x 135mm	1.2kg/0.8kg
PR 6246/13..	1t	/..D1/..C3/..C6	/..D1E/..C3E/C6E	220 x 215 x 135mm	1.9kg/0.8kg
PR 6246/23..	2t	/..D1/..C3/..C6	/..D1E/..C3E/C6E	220 x 215 x 135mm	2.1kg/1.6kg
PR 6246/33..	3t	/..D1/..C3/..C6	/..D1E/..C3E/C6E	220 x 215 x 135mm	2.1kg/1.7kg

Type	Further options	Dimensions	Ordernumber
PR6130/08	Plastic cable junction box	material plastic, 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 1.4301 + IP 68, IP 69k, for all industrial, intrinsically and safe, 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
PR6143/80N	Pivoting rod	up to 2kN horizontal force, mild steel, zinc plated	9405 361 43801
PR6143/83N	Pivoting rod	up to 20kN horizontal force, mild steel, zinc plated	9405 361 43831
PR6046/00S	Stainless steel swivel bearing	material 1.4301, tension mounting kit for load cells up to 500kg nominal load	9405 360 46002
PR6046/00N	Swivel bearing	material mild steel, zinc plated, tension mounting kit for load cells up to 500kg nominal load	9405 360 46001
PR6046/11S	Stainless steel swivel bearing	material 1.4548, tension mounting kit for load cells 1t - 3t nominal load	9405 360 46112
PR6046/11N	Swivel bearing	material mild steel, zinc plated, tension mounting kit for load cells 1t - 3t nominal load	9405 360 46111

