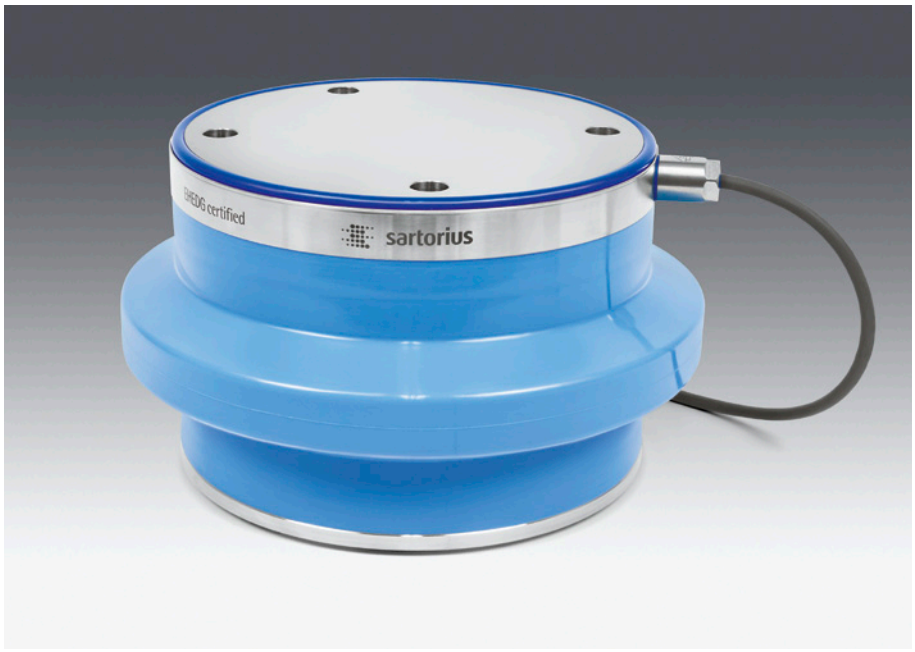
This document courtesy of:

Data Weighing Systems, Inc.

Contact Us

For immediate assistance call
1-800-750-6842

Contego® Hygienic Weighing Module



100 kg... 2 t, Type D1/C3

- Compact and absolute hygienic weighing solution for the load range up to 2 t
- Quick and seamless installation
- Easy cleaning without residue
- High chemical resistance
- Protective cover made of FDA-compliant silicone
- Integrated functions like lift-off protection, jack-up function and constrainer for horizontal forces
- Proven rocker-pin principle
- Ex version available
- W & M approval (acc. to OIML R60)
- EHEDG-certified
- High ingress protection by using protection class IP69K

Application
The Contego® Hygienic Weighing Module has been designed especially for the instrumentation of process vessels in which ease of cleaning and avoidance of hygienically critical areas are highly important for a safe and efficient production process.

The weighing module can be used for all types of process vessels like production, mixing, charging and storage vessels, as well as intermediate and permanent storage tanks. The use of the hygienic weighing module allows a significant reduction in cleaning effort and, at the same time, decreases the contamination risk for products.

The use of high-quality materials provides high chemical resistance and therefore guarantees reliable long-term use, even when cleaning frequently with aggressive cleaning agents.

Product Profile
A special design feature is the consistent implementation of the construction principles for hygienic design according to the specifications of the European Hygienic Engineering Design Group (EHEDG).

Additionally, no compromises were made in selecting the materials. They are oriented towards internationally certified standards and provisions as well. The Contego® mounting plates are made of stainless steel grade 1.4404 and provide solid protection against corrosion even when using strong cleaning agents.

The protective cover made of FDA-compliant silicone ensures a reliable encapsulation of the module and prevents the intrusion of dirt and microorganisms. The well thought-out connecting geometry between protective cover and mounting plates guarantees a safe fitting and, together with the already excellent resistance to aging of the silicone, ensures reliable protection over years.

The Contego® weighing module therefore represents an absolutely hygienic unity of load cell and installation kit. As a result, you can refrain from using other expensive and complicated constructions to protect the weighing technology against dirt.

Besides the hygienic aspect, the Contego® weighing module provides all the other important mechatronic functions for a fast operational startup and reliable results. Therefore, this weighing module has an integrated constrain, which holds the process vessel in the proper position and, at the same time, allows movement through thermal expansion of the vessel. The integrated lift-off protector is a reliable safety feature to protect the vessel from tilting. At the same time, this feature can be used as a lifting system as well. This way, the vessel leg can be raised a few millimeters without using supplemental tools.

A PR 6241 S-type load cell is used with this module. This series is distinguished by its unmatched reliability, robustness and stability, enabling years of undisturbed usage without any readjustment, not to mention the high measuring accuracy and reproducibility.

Load Cell Construction
S-shaped version for torque-free load application. Made of pure stainless steel, hermetically sealed and filled with protective gas.

Material
Load cell: 1.4542 (AISI 630, 17-4PH)
Mounting parts: 1.4404 (AISI 316L)
Bellow: Silicone

Ingress protection
Load cell: IP68 in accordance with IEC 60529: 1.5 m water column/10,000h.
Weighing module: IP69K, according to DIN 40050: water under high pressure, steam cleaning

Cable
Robust, flexible, screened,
Cable 4 × 0.35 mm^2
Sheath: TPE thermoplastic elastomer
Color: gray
for PR 6241/.. E: blue
Diameter: 5 mm, length: 5 m
Bending radius:
Fixed installation: ≥ 25 mm
Flexible installation: ≥ 75 mm

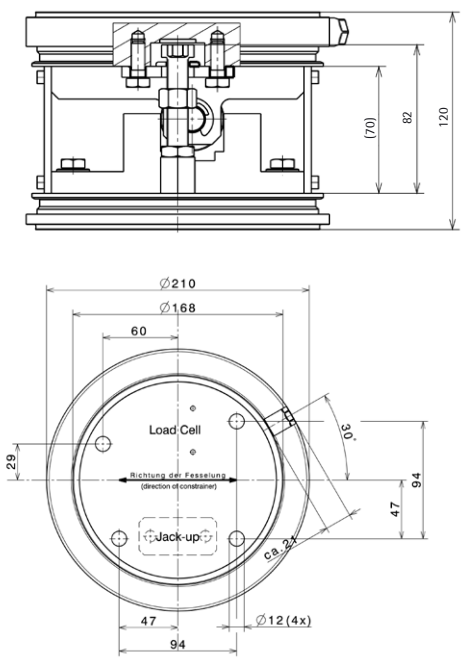
Certificates of conformity
Valid for: Contego...Ex
Marking: II 1G EEx ia IIC T6,
II 1D IP65 85°C
Registration number: PTB 02 ATEX 2059,
TÜV 03 ATEX 2301x
Usable for explosion hazard subgroups IIA, IIB and III. IIC on request.

Technical Data: Metrological		**Abbr.**	**D1**	**C3**	
Accuracy Class			0.04	0.015	% E_{max}
Minimal dead load	Lowest limit of specified measuring range	E_{min}	0	0	
Rated capacity	Highest limit of specified measuring range	E_{max}	See table		
Max. usable load	Upper limit of measurements	E_u	150	150	% E_{max}
Destructive load	Danger of mechanical destruction	E_d	> 300	> 300	% E_{max}
Minimum LC verification	Minimum load cell verification interval ($v_{min} = E_{max}/Y$)	Y	5,000	14,000	
Deadload output return	Factor for dead load output return after load ($DR = ½ \times E_{max}/Z$)	Z	1,000	3,000	
Rated output	Relative output at nominal load	C_n	2	2	mV/V
Tolerance on rated output	Permissible deviation from rated output	d_c	< 0.25	< 0.07	% C_n
Zero output signal	Load cell output signal under unloaded condition	S_{min}	< 1.0	< 1.0	% C_n
Repeatability error	Max. change in load cell output for repeated loading	E_R	< 0.01	< 0.005	% C_n
Creep, during 30min	Max. change in load cell output under nominal load	d_{cr}	< 0.03	< 0.015	% C_n
Linearity	Max. deviation from best straight line through zero	d_{Lin}	< 0.03	< 0.01	% C_n
Hysteresis	Max. difference in LC output between loading and unloading characteristic	d_{hy}	< 0.04	< 0.015	% C_n
Temperature effect on S_{min}	Max. change of S_{min} per 10K over BT referred to C_n	TK_{Smin}	< 0.028	< 0.01	% C_n/10 K
Temperature effect on C	Max. change of C per 10K over BT referred to C_n	TK_c	< 0.03	< 0.01	% C_n/10 K
Input impedance	Between supply terminals	R_{LC}	650 ± 6	650 ± 6	Ω
Output impedance	Between measurement terminals	R_O	610 ± 1	610 ± 0.5	Ω
Insulation impedance	Between inner circuit and housing at $100V_{DC}$	R_{IS}	> $5{,}000 \times 10^6$	> $5{,}000 \times 10^6$	Ω
Insulation voltage	Between circuit and housing (Ex version only)		500	500	V
Nominal supply voltage	To hold the specified performance	B_u	4... 24	4... 24	V
Nominal ambient temperature range	To hold the specified performance	B_T	-10... +55	-10... +55	°C
Usable ambient temp. range	Permissible for continuous operation without damage	B_{TU}	-40... +95	-40... +95	°C
Storage temperature range	Transporation and storage	B_{TI}	-40... +95	-40... +95	°C
Permissible eccentricity	Permissible displacement from nominal load line	S_{ex}	5	5	mm
Vibration resistance	Resistance against oscillations (IEC 68-2-6 Fc)		20 g, 100 h, 10... 150 Hz	20 g, 100 h, 10... 150 Hz	
Ambient pressure impact	Influence ambient of air pressure on S_{min}	PK_{Smin}	0.005	0.0025	% C_n/kPa
Nominal deflection	Max. elastic deformation under nominal load	S_{nom}	< 0.5	< 0.5	mm

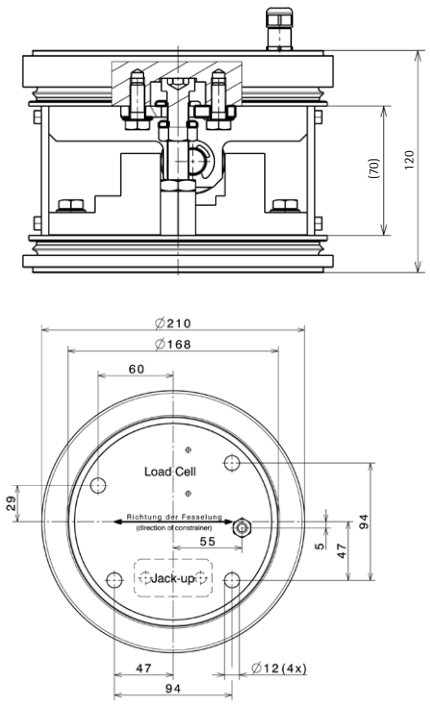
Technical Data: Mechanical	
Maximum permissible horizontal force	7 kN
Horizontal destructive force	> 30 kN
Maximum permissible vertical load without load cell	1.5 t
Maximum permissible lift-off force	8 kN
Maximum permissible load for jack-up	1.5 t

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

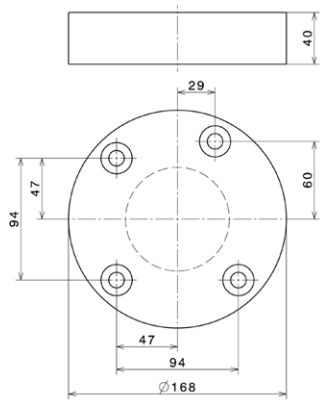
Version A with cable outlet on side



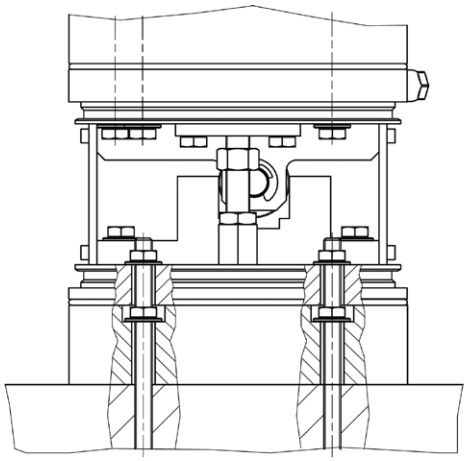
Version B with cable outlet on top



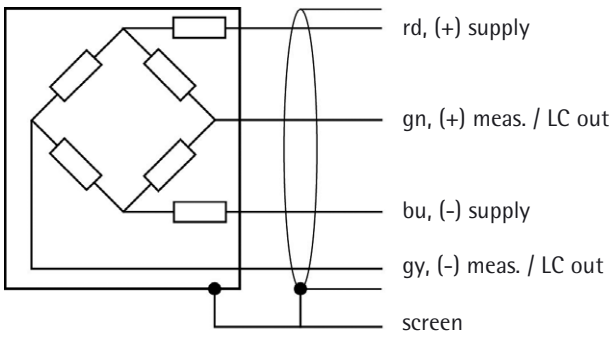
PR 6041/80S adaptor plate

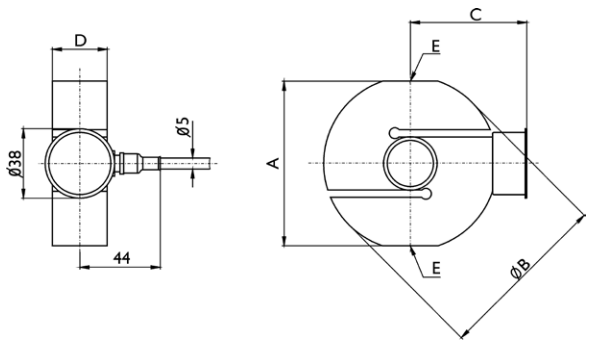


Assembly proposal with adaptor plate



Connection diagram

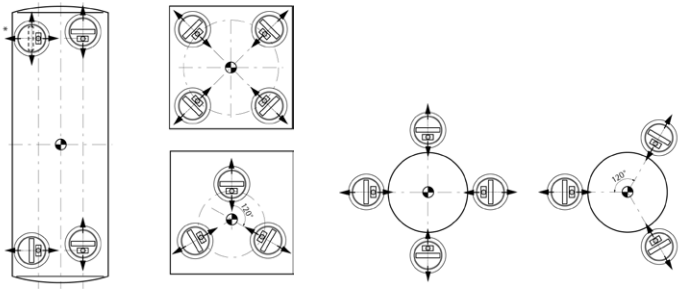




Type	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
PR 6241/12...52	60	65	50	23	M12
PR 6241/13...23	60	65	50	30	M12

All dimensions in mm

Design Recommendations



Ordering Information

For nominal load E_{max}	Type*	Version	Ex version	Packaging dimensions	Weight (gross | net)
100 kg	A, B	D1	Ex A, Ex B	240 × 240 × 185 mm	12 kg | 11 kg
200 kg	A, B	D1, C3	Ex A, Ex B	240 × 240 × 185 mm	12 kg | 11 kg
300 kg	A, B	D1, C3	Ex A, Ex B	240 × 240 × 185 mm	12 kg | 11 kg
500 kg	A, B	D1, C3	Ex A, Ex B	240 × 240 × 185 mm	12 kg | 11 kg
1 t	A, B	D1, C3	Ex A, Ex B	240 × 240 × 185 mm	12 kg | 11 kg
2 t	A, B	D1, C3	Ex A, Ex B	240 × 240 × 185 mm	12 kg | 11 kg

* A = Cable outlet on side
B = Cable outlet on top
Ex = Usage in Ex range

Further options

Type	Equipment		Dimensions	Order Number
PR 6130/64Sa	Cable junction box	Material stainless steel 1.4301, IP68, IP69k, for all industrial, intrinsically safe and W&M applications, for up to 4 load cells	190 × 160 × 60 mm	9405 361 30642
PR 6130/65S	Cable junction box	Material 1.4301, IP68, IP69k, for all industrial applications, intrinsically safe and W&M applications, max 4 load lcells	172 × 105 × 55 mm	9405 361 30652
PR 6135	Extension cable	for all applications, grey	D = 9 mm	9405 361 35..2
PR 6135/A	Extension cable, armored	for all applications, grey	D = 13 mm	9405 361 35..9
PR 6136	Extension cable	for all applications, blue	D = 11 mm	9405 361 36..2
PR 6136/A	Extension cable, armored	for all applications, blue	D = 13 mm	9405 361 36..9
PR 6043/31S	Thrust piece kit	Thrust piece kit 100 kg... 2 t		9405 360 43312
PR 6041/80S	Adaptor plate			9405 360 41802

Sartorius Mechatronics T&H GmbH
Meiendorfer Strasse 205
22145 Hamburg, Germany

Phone +49.40.67960.303
Fax +49.40.67960.383

info.mechatronics@sartorius.com
www.sartorius.com

Specifications subject to change without notice
Printed in Germany
n/sart · C
Publication No.: HC-2001-e12031
Order No.: 9498 760 41601
Date 03.2012