

Diaphragm pressure gauge, flush

For sanitary applications

Model PG43SA-C, compact version, NS 63

WIKA data sheet PM 04.15



for further approvals
see page 10

Applications

- Process industry: Biotechnology and pharmaceutical industries, cosmetics manufacturing, food industry, particularly tank and vessel construction
- For gaseous and liquid aggressive media that are highly viscous or crystallising, also in aggressive environments

Special features

- Compact, robust, easily cleanable design (patent applied for, among others European patent no. DE 102008042455)
- Dry measuring cell, no transmission fluid
- Flush, welded diaphragm
- Suitable for SIP and CIP
- Large selection of process connections



Model PG43SA-C, compact version, NS 63

Description

The model PG43SA-C diaphragm pressure gauge has been specifically designed for the requirements of sanitary applications.

The purely mechanical pressure transmission, using the diaphragm-element measuring principle, and the high overload safety ensure a safe pressure measurement. As a result of the dry measuring cell, the risk of contamination of the product by transmission fluid is eliminated. The flush welded diaphragm element in conjunction with the aseptic process connections (e.g. clamp, threaded, VARIVENT®, BioControl®) enables a dead-space free connection to the process.

The very compact and robust PG43SA-C measuring instrument is particularly suited for vertical pipelines, small plants and mobile containers. The patented design with integrated process connection at the back of the case enables space-saving installation.

The measuring instrument finds applications, for example, in systems for ultrapure steam generation or as an independent pressure display, without the need for an external power supply, on portable tanks.

The PG43SA-C in hygienic design can be used for CIP (cleaning in place) and SIP (sterilisation in place) and in wash-down areas. The measuring instrument can thus be cleaned reliably and time-efficiently.

Based on a third party verification, the model PG43SA-C corresponds to the 3-A Sanitary Standard.

A variety of 3.1 and 2.2 certificates are available for GMP-compliant documentation, such as a material certificate or the list of single measured values.

Specifications

Nominal size in mm

63

Accuracy class

2.5

Scale ranges			
bar	-1 ... +2	-1 ... +4	-1 ... +9
	0 ... 3	0 ... 5	0 ... 10
psi	-30 inHg ... +30	-30 inHg ... +60	-30 inHg ... +130
	0 ... 45	0 ... 70	0 ... 150

Option: Dual scale

The given scale ranges are also available in kPa and MPa.

Pressure limitation

Steady: 3/4 x full scale value

Fluctuating: 2/3 x full scale value

Overload safety

5x full scale value, max. 40 bar or max. pressure rating (PN) of the process connection

See tables from page 4

Permissible temperature

Ambient: -20 ... +60 °C

Medium: -20 ... +150 °C

CIP and SIP: 150 °C continuously for wetted parts

Temperature effect

When the temperature of the measuring system deviates from the reference temperature (+20 °C): max. $\pm 0.8 \%$ /10 K of full scale value

Ingress protection

IP66 per IEC/EN 60529

Process connection

Stainless steel 1.4435 (316L), UNS S31603, centre back mount

- Clamp connection per DIN 32676 / ISO 2852
- Aseptic connection per DIN 11864-1 /-3
- Milk thread fitting per DIN 11851
- VARIVENT®
- NEUMO BioControl®
- others on request

For exact designs and nominal widths see tables from page 4

Pressure element

Diaphragm element, welded to the process connection, NiCr alloy 2.4668 (Inconel® 718), UNS N07718

Surface roughness of wetted parts

- $R_a \leq 0.76 \mu\text{m}$ (30 μin) per ASME BPE SF3
- Option: $R_a \leq 0.38 \mu\text{m}$ (15 μin), weld seam: $R_a \leq 0.76 \mu\text{m}$ (30 μin)
- Option: Electropolished, $R_a \leq 0.38 \mu\text{m}$ (15 μin), weld seam: $R_a \leq 0.76 \mu\text{m}$ (30 μin) per ASME BPE SF4

Level of cleanliness of wetted parts

ASTM G93 level C / ISO 15001 (residual content of non-volatile hydrocarbons $\leq 66 \text{ mg/m}^2$)

Movement

Copper alloy

Dial

Aluminium, white, black lettering

Pointer

Aluminium, black

Case

Stainless steel 1.4435 (316L)


Surface roughness $R_a \leq 0.8 \mu\text{m}$

Window

Polysulfone, high-temperature resistant

VARIVENT® is a registered trademark of the company GEA Tuchenhausen.
BioControl® is a registered trademark of the company NEUMO.

Approvals

Logo	Description	Country
	EAC (option) Pressure equipment directive	Eurasian Economic Community
	GOST Metrology, measurement technology	Russia
	3-A Sanitary Standard This instrument is 3-A marked, based on a third party verification for conformance to the 3-A standard number 74.	USA
	EHEDG Hygienic Equipment Design	European Community
-	CRN Safety (e.g. electr. safety, overpressure, ...)	Canada

Manufacturer's information and certificates

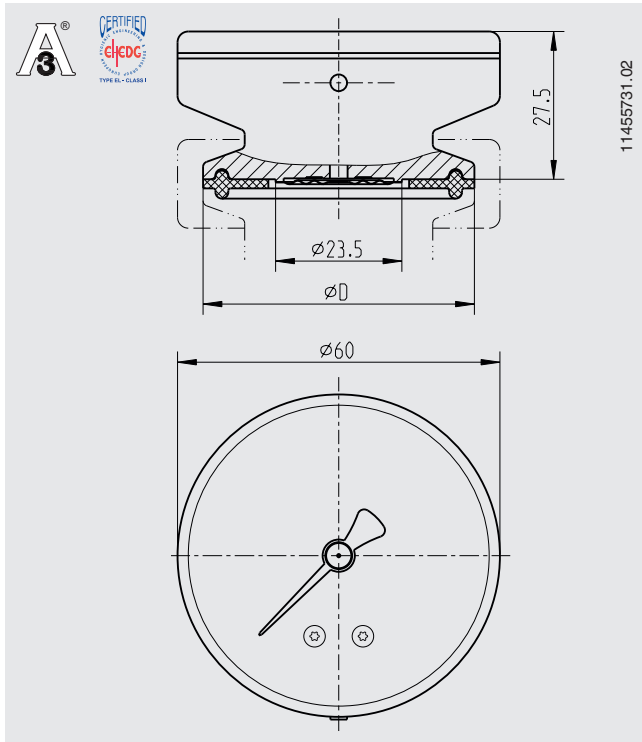
Manufacturer's declaration regarding regulation (EC) no. 1935/2004

Certificates (option)

- 2.2 test report per EN 10204
(e.g. state-of-the-art manufacturing, material proof, indication accuracy, free from substances of animal origin)
- 3.1 inspection certificate per EN 10204
(e.g. material proof for wetted metallic parts, indication accuracy)
- Others on request

Approvals and certificates, see website

Dimensions in mm



Type of process connection: Clamp connection per
DIN 32676

Pipe standard: Pipes per DIN 11866 row C or ASME BPE

DN	For pipe	PN ¹⁾	Dimensions in mm
	Outer Ø x wall thickness		D
1 1/2"	38.1 x 1.65	40	50.5
2"	50.8 x 1.65	40	64

1) For maximum pressure range consider pressure rating of clamp.

Type of process connection: Clamp connection per
DIN 32676

Pipe standard: Pipes per DIN 11866 row A or DIN 11850 row
2

DN	For pipe	PN ¹⁾	Dimensions in mm
	Outer Ø x wall thickness		D
25	29 x 1.5	40	50.5
32	35 x 1.5	40	50.5
40	41 x 1.5	40	50.5
50	53 x 1.5	40	64

1) For maximum pressure range consider pressure rating of clamp.

Type of process connection: Clamp connection per BS4825
part 3

Pipe standard: Pipes per BS4825 part 1 and O.D. tube

DN	For pipe	PN ¹⁾	Dimensions in mm
	Outer Ø x wall thickness		D
1 1/2"	38.1 x 1.6	40	50.5
2"	50.8 x 1.6	40	64

1) For maximum pressure range consider pressure rating of clamp.

Type of process connection: Clamp connection per
DIN 32676

Pipe standard: Pipes per DIN 11866 row B or ISO 1127 row 1

DN	For pipe	PN ¹⁾	Dimensions in mm
	Outer Ø x wall thickness		D
26.9	26.9 x 1.6	40	50.5
33.7	33.7 x 2	40	50.5
42.4	42.4 x 2	40	64
48.3	48.3 x 2	40	64

1) For maximum pressure range consider pressure rating of clamp.

Type of process connection: Clamp connection per ISO 2852
Pipe standard: Pipes per ISO 2037 and BS 4825 part 1

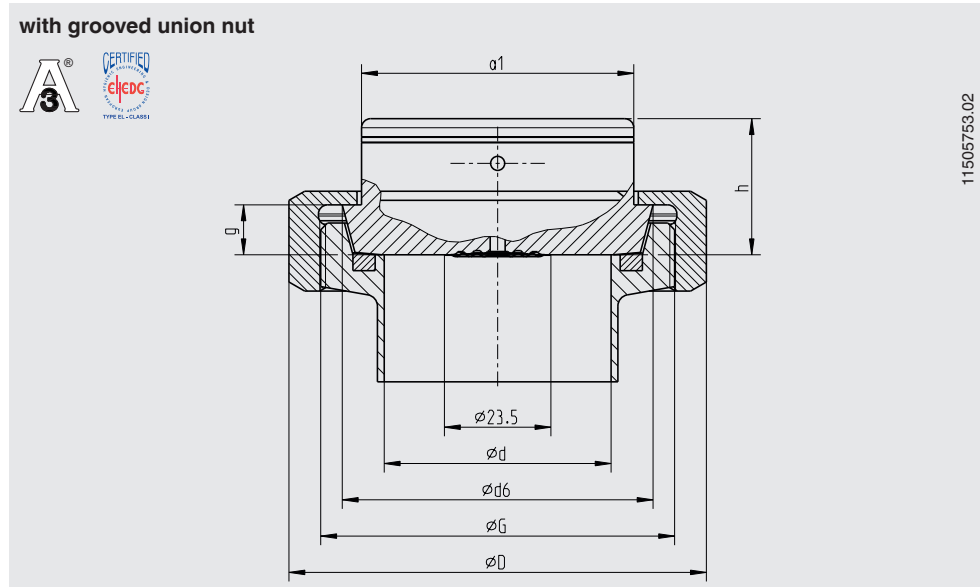
DN	For pipe	PN ¹⁾	Dimensions in mm
	Outer Ø x wall thickness		D
28	28 x 1.2	40	50.5
33.7	33.7 x 1.2	25	50.5
38	38 x 1.2	25	50.5
40	40 x 1.2	25	64
51	51 x 1.2	25	64

1) For maximum pressure range consider pressure rating of clamp.

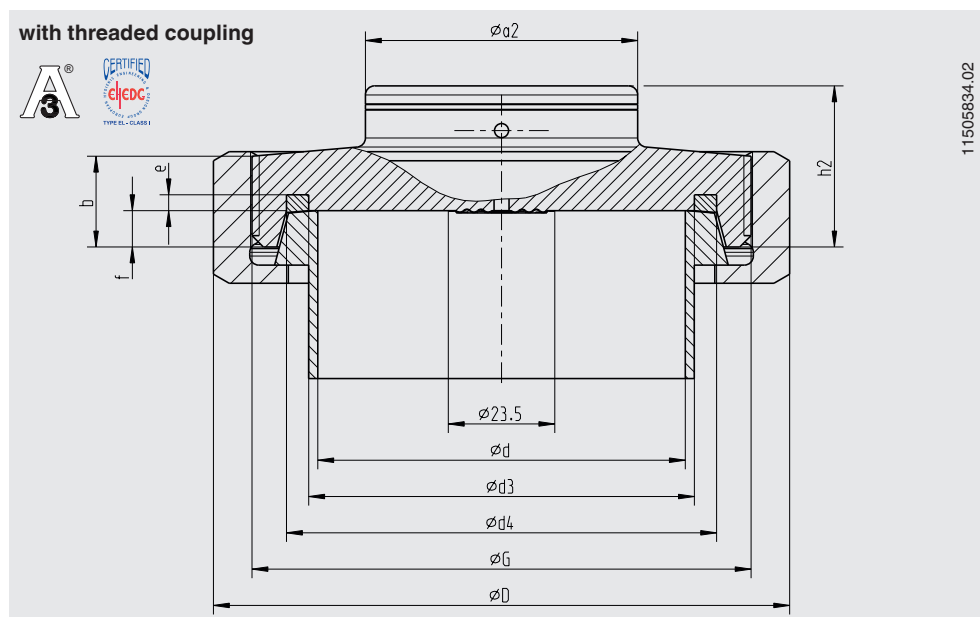
EHEDG conformity only in combination with Tri-clamp sealings from
Combifit International B.V.

Option: Type of process connection: Threaded connection per DIN 11851

Pipe standard: Pipes per DIN 11850 row 2



DN	For pipe	PN	Dimensions in mm							
	Outer Ø x wall thickness		G	d	D	d6	f	g	h	a1
50	53 x 1.5	25	Rd 78 x 1/6	50	92	68.5	7	11	30	60

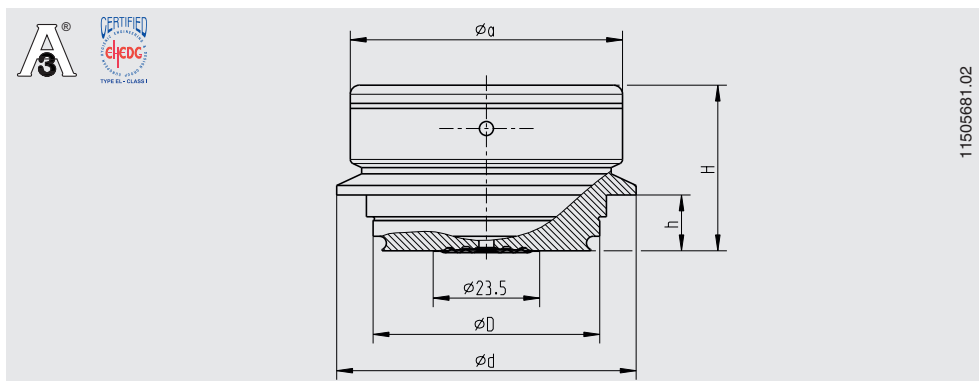


DN	For pipe	PN	Dimensions in mm									
	Outer Ø x wall thickness		G	b	d	D	d3	d4	e	f	h2	a2
25	29 x 1.5	40	Rd 52 x 1/6	-	26	63	30	39.8	3.5	7	34.5	60
32	35 x 1.5	40	Rd 58 x 1/6	-	32	70	36	45.8	3.5	7	34.5	60
40	41 x 1.5	40	Rd 65 x 1/6	14	38	78	42	51.8	3.5	7	34.5	60
50	53 x 1.5	25	Rd 78 x 1/6	14	50	92	54	63.8	3.5	7	34.5	60

For a 3-A conform connection of process connections with milk thread fittings per DIN 11851, profile sealings from SKS Komponenten BV or Kieselmann GmbH have to be used.

EHEDG conformity only in combination with ASEPTO-STAR k-flex upgrade, sealing from Kieselmann GmbH.

Option: Type of process connection: VARIVENT®



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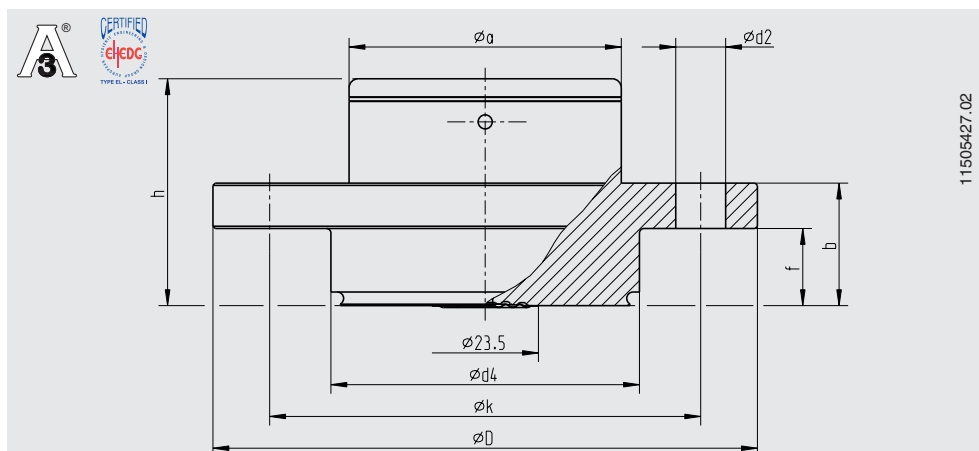
Access unit connection	PN ¹⁾	Dimensions in mm				
		D	d	H	h	a
Form F	25	50	66	36.5	12.3	60
Form N	25	68	84	36.5	12.3	60

1) Consider pressure rating of VARINLINE® access unit.

Note:
Suitable for installation into the VARINLINE® access unit from GEA Tuchenhagen. EHEDG conformity only in combination with EPDM O-ring from GEA Tuchenhagen GmbH.

VARIVENT® and VARINLINE® are registered trademarks of the company GEA Tuchenhagen GmbH.

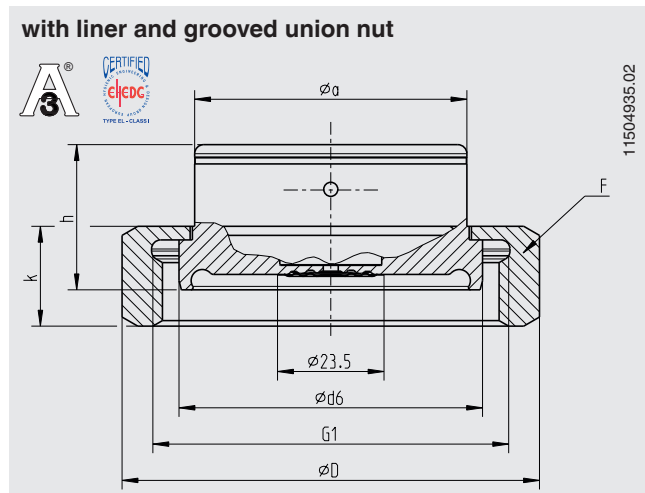
Option: Type of process connection: NEUMO BioControl®



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BioControl® connection	PN	Dimensions in mm							
		d2	d4	D	f	b	k	h	a
Size 65	16	4 x Ø 11	68	120	17	27	95	50	60

Option: Aseptic threaded pipe connection DIN 11864-1 form A



Type of process connection: Aseptic threaded pipe connection per DIN 11864-1 form A

Pipe standard: Pipes per DIN 11866 row A or DIN 11850 row 2

DN	For pipe	PN ¹⁾	Dimensions in mm							
	Outer Ø x wall thickness		d6	G1	h	F	D	k	a	Aseptic O-ring
50	53 x 1.5	25	66.9	Rd 78 x 1/6	32	DN 50	92	22	60	52 x 5

Type of process connection: Aseptic threaded pipe connection per DIN 11864-1 form A

Pipe standard: Pipes per DIN 11866 row B or DIN ISO 1127 row 1

DN	For pipe	PN ¹⁾	Dimensions in mm							
	Outer Ø x wall thickness		d6	G1	h	F	D	k	a	Aseptic O-ring
48.3	48.3 x 2.0	25	66.9	Rd 78 x 1/6	32	DN 50	92	22	60	46.5 x 5

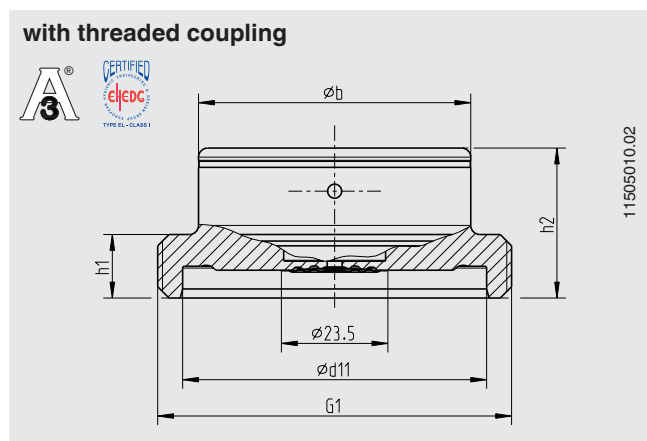
Type of process connection: Aseptic threaded pipe connection per DIN 11864-1 form A

Pipe standard: Pipes per DIN 11866 row C or ASME BPE 1997

DN	For pipe	PN ¹⁾	Dimensions in mm							
	Outer Ø x wall thickness		d6	G1	h	F	D	k	a	Aseptic O-ring
2"	50.8 x 1.65	25	66.9	Rd 65 x 1/6	32	DN 50	92	22	60	50 x 5

1) Permissible pressure in bar; these pressures may only be applied when using suitable sealing materials up to a temperature of -10 to +140 °C.

Option: Aseptic threaded pipe connection DIN 11864-1 form A



Type of process connection: Aseptic threaded pipe connection per DIN 11864-1 form A

Pipe standard: Pipes per DIN 11866 row A or DIN 11850 row 2

DN	For pipe	PN ¹⁾	Dimensions in mm					Aseptic O-ring
	Outer \varnothing x wall thickness		d11	G1	h1	h2	b	
25	29 x 1.5	40	43	Rd 52 x 1/6	-	33	60	28 x 3.5
32	35 x 1.5	40	49	Rd 58 x 1/6	-	33	60	34 x 5
40	41 x 1.5	40	55	Rd 65 x 1/6	14	33	60	40 x 5
50	53 x 1.5	25	67	Rd 78 x 1/6	14	33	60	52 x 5

Type of process connection: Aseptic threaded pipe connection per DIN 11864-1 form A

Pipe standard: Pipes per DIN 11866 row B or DIN ISO 1127 row 1

DN	For pipe	PN ¹⁾	Dimensions in mm					Aseptic O-ring
	Outer \varnothing x wall thickness		d11	G1	h1	h2	b	
26.9	26.9 x 1.6	40	43	Rd 52 x 1/6	-	33	60	26 x 3.5
33.7	33.7 x 2.0	40	49	Rd 58 x 1/6	-	33	60	32 x 5
42.4	42.4 x 2.0	25	55	Rd 65 x 1/6	14	33	60	40.5 x 5
48.3	48.3 x 2.0	25	67	Rd 78 x 1/6	14	33	60	46.5 x 5

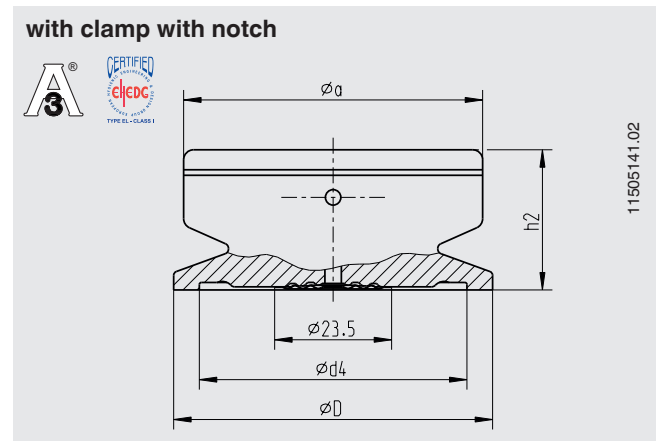
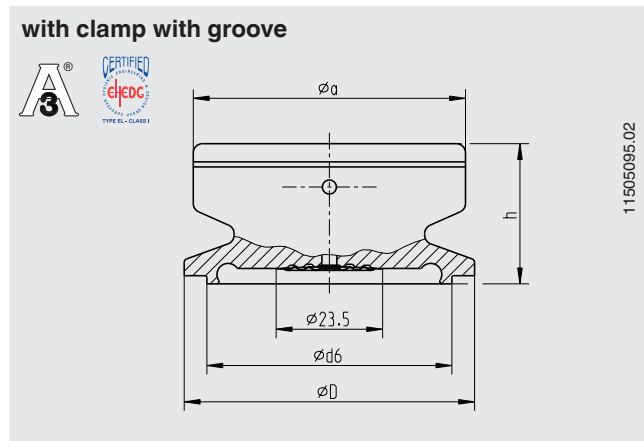
Type of process connection: Aseptic threaded pipe connection per DIN 11864-1 form A

Pipe standard: Pipes per DIN 11866 row C or ASME BPE 1997

DN	For pipe	PN ¹⁾	Dimensions in mm					Aseptic O-ring
	Outer \varnothing x wall thickness		d11	G1	h1	h2	b	
1"	25.4 x 1.65	40	43	Rd 52 x 1/6	-	33	60	24 x 3.5
1 1/2"	38.1 x 1.65	40	55	Rd 58 x 1/6	-	33	60	37 x 5
2"	50.8 x 1.65	25	67	Rd 65 x 1/6	14	33	60	50 x 5

1) Permissible pressure in bar; these pressures may only be applied when using suitable sealing materials up to a temperature of -10 to +140 °C.

Option: Aseptic clamp connection DIN 11864-3 form A



Type of process connection: Aseptic clamp connection per DIN 11864-3 form A

Pipe standard: Pipes per DIN 11866 row A or DIN 11850 row 2

DN	For pipe	PN 1)	Dimensions in mm						Aseptic O-ring
	Outer Ø x wall thickness		d6	d4	D	h	h2	a	
25	29 x 1.5	40	38.3	38.4	50.5	30	28.3	60	28 x 3.5
32	35 x 1.5	40	47.6	47.7	50.5	31	28	60	34 x 5
40	41 x 1.5	40	53.6	53.7	64	31	28	60	40 x 5
50	53 x 1.5	25	65.6	65.7	77.5	31	28	60	52 x 5

Type of process connection: Aseptic clamp connection per DIN 11864-3 form A

Pipe standard: Pipes per DIN 11866 row B or DIN ISO 1127 row 1

DN	For pipe	PN 1)	Dimensions in mm						Aseptic O-ring
	Outer Ø x wall thickness		d6	d4	D	h	h2	a	
26.9	26.9 x 1.6	40	36	36.1	50.5	30	28.3	60	26 x 3.5
33.7	33.7 x 2.0	40	45.3	45.3	50.5	31	28	60	32 x 5
42.4	42.4 x 2.0	25	54	54.1	64	31	28	60	40.5 x 5
48.3	48.3 x 2.0	25	59.9	60	64	31	28	60	46.5 x 5

Type of process connection: Aseptic clamp connection per DIN 11864-3 form A

Pipe standard: Pipes per DIN 11866 row C or ASME BPE 1997

DN	For pipe	PN 1)	Dimensions in mm						Aseptic O-ring
	Outer Ø x wall thickness		d6	d4	D	h	h2	a	
1"	25.4 x 1.65	40	34.3	34.4	50.5	30	28.3	60	24 x 3.5
1 ½"	38.1 x 1.65	40	50.4	50.5	64	31	28	60	37 x 5
2"	50.8 x 1.65	25	63.4	63.5	77.5	31	28	60	50 x 5

1) Permissible pressure in bar; these pressures may only be applied when using suitable sealing materials up to a temperature of -10 to +140 °C.

Ordering information

Model / Nominal size / Scale range / Process connection (type of process connection, pipe standard, size) / Options

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