

Bourdon tube pressure gauge NS 63/100, hygienic design for diaphragm seal operation Type series BH8



Application area

- Pharmaceutical industry
- Food industry
- Biotechnology

Features

- High quality case NS 63/100 in hygienic design as per EHEDG recommendation
- Degree of protection IP 65
- Accuracy class 1.6/1.0 per EN 837-1
- Flush mounted diaphragm
- Small temperature error by means of reduced-volume measuring element

Options and additional features

- Neck tube and diaphragm seal in a one-piece design, optionally complete case, including neck tube and diaphragm seal, in hygienic version (Ra < 0.76 µm as per EHEDG Doc. 8 / ASME BPE SF3)
- Approvals/Certificates
 - Material certificate per EN 10204-3.1
 - Calibration certificate per EN 10204-3.1
- As per UKCA regulations
- Damping of movement
- Scale with fine division
- Autoclavable design
- Wetted parts and case surfaces electropolished

Application

The BH8 pressure gauge has been engineered to meet the highest hygiene requirements in the food, pharmaceutical and biotechnology sectors. It can be supplied with a wide variety of hygienic process connections. Its hygienic case design conforms to EHEDG recommendations, so ensuring optimum cleaning capability, e.g. in autoclaves. Removing case parts (e.g. the vent valve) is not necessary.

Technical data

Constructional design / case

Design:	High quality case of stainless as per EHEDG recommendation
Material:	<u>Multi-piece design:</u> Stainless steel mat.-no. 1.4404 (316L) <u>One-piece design:</u> Stainless steel mat.-no. 1.4435 (316L) delta ferrite content < 3%
Nominal size:	NS 63 or NS 100
Degree of protection per EN 60529:	IP 65
Atmospheric pressure compensation:	Via vent valve in the window Material: PVDF, FDA compliant
Material case gasket:	EPDM, FDA compliant
Type plate:	Adhesive label Option: laser marking, $R_a < 2.5 \mu\text{m}$ in the area around the laser marking. Option: visible inside the case.
Window:	Polycarbonate Option: PPSU in case of autoclavable design
Measuring element:	Bourdon tube, circular
Process-connection:	welded multi-piece (neck tube/diaphragm seal) one-piece (neck tube/diaphragm seal)
System filling:	Synthetic oil FD1, free of silicone, FDA compliant
Movement:	Material stainless steel Option: with integrated damping system
Scale:	Pure aluminium, white with black inscription Option: scale with fine division Option: red marking, Special scale upon request
Pointer:	Pure aluminium, black

Process connection

See order details.

Material wetted parts

Diaphragm and body:	Stainless steel 316L, see product group D5 Option: Stainless steel mat.-no. 1.4435 (316L) Delta ferrite content < 3 %
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Nominal range

See order details, further ranges upon request.

Overload limit:	1.3 times
	Option: 2 times

For information on definitions of terms regarding the Pressure Equipment Directive, see Technical Instruction TA_068.

Accuracy

Accuracy class:	per EN 837-1:	
	NS 63:	class 1.6
	NS 100:	class 1.0
	Option:	
	NS 63:	class 1.0
Temperature-influence:	Max. $\pm 0.4\%$ / 10K of measuring span per EN 837-1	
Process-temperature-influence:	depending on active diaphragm diameter	
	dM 22,6...24 mm	$\leq 25 \text{ mbar} / 10 \text{ K}$
	dM 27...30 mm	$\leq 20 \text{ mbar} / 10 \text{ K}$
	dM 34...36 mm	$\leq 8 \text{ mbar} / 10 \text{ K}$
	dM 40...46 mm	$\leq 5 \text{ mbar} / 10 \text{ K}$
	dM 51...58 mm	$\leq 2 \text{ mbar} / 10 \text{ K}$
	A detailed calculation of accuracy can be submitted upon request.	

Hygienic design

The wetted surfaces made of stainless steel are executed according to EHEDG Doc.8 and ASME BPE SF3

We guarantee the following surface roughness values when selecting the hygienic design:

Diaphragm foil:	$R_a \leq 0.38 \mu\text{m}$
Laser welds:	$R_a \leq 0.76 \mu\text{m}$
Turned parts:	$R_a \leq 0.76 \mu\text{m}$

Optionally in the one-piece design all surfaces, not only the wetted parts, are available in the roughness $R_a \leq 0,76 \mu\text{m}$.

Temperature ranges

Ambient:	-10...50 °C
Media:	-10...140 °C
Storage:	-20...60 °C

Options:

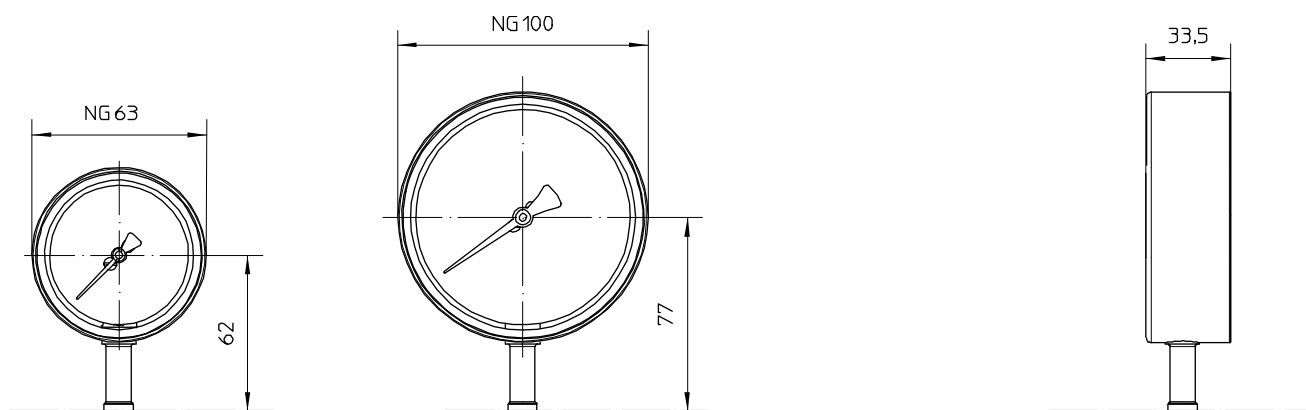
- Autoclavable at 121 °C for 30 minutes (NS 63 only)
- Autoclavable at 140 °C for 1 hour (NS 63 only)

Tests and certificates

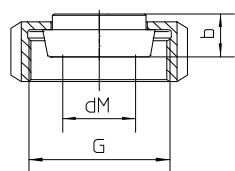
Information on other models see order details or upon request.

Dimensions

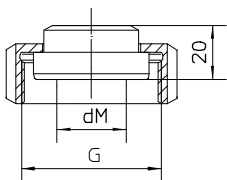
Multi-piece design / case



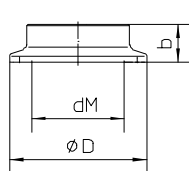
Process connection



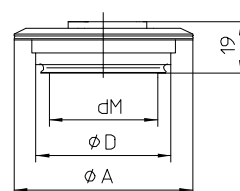
sanitary connection
with coupling nut
per DIN 11851



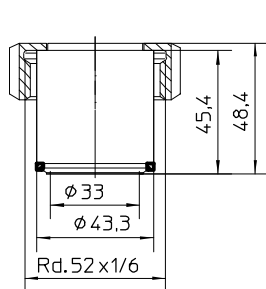
aseptic screw joint
collar connection
with union nut per
DIN 11864-1



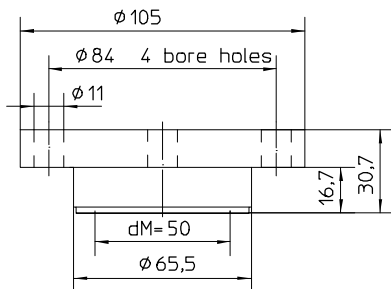
clamp connection
per DIN 32676/ISO 2852



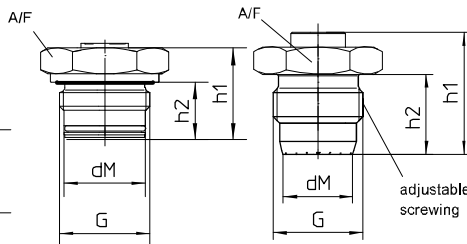
VARIVENT® connection for
VARINLINE® case



HYGENIC-Tubus *
Ø43.3 with screwing
DN25/PN40



DRD-connection DN50 PN40 *



Screw-in thread *
with o-ring-gasket
and additionally gasket
per DIN EN ISO 1179-2
model E (DIN 3852)

HYGENIC-screw-in thread *
no gasket
tightening torque
20 Nm, max. nominal pressure 10 bar
50 Nm, max. nominal pressure 50 bar

* weld-in adapter
see data-sheet D8-037

Sanitary pipe connection with union nut per DIN 11851

DN	PN	dM	b	G
25	40	27	16	Rd.52x1/6"
32	40	34	16	Rd.58x1/6"
40	40	40	16	Rd.65x1/6"
50	25	51	17	Rd.78x1/6"

Aseptic screw joint collar connection with union nut per DIN 11864-1

DN	PN	dM	G
25	40	24	Rd.52x1/6"
32	40	30	Rd.58x1/6"
40	40	34	Rd.65x1/6"
50	25	48	Rd.78x1/6"

Clamp connection per DIN 32676 model A (metric) for pipes per EN 10357 (DIN 11850)

DN	PN	dM	b	D
25	25	22.6	14	50.5
32	25	27	12	50.5
40	25	34	12	50.5
50	16	46	14	64

Clamp connection per DIN 32676 model B (OD, ISO) for pipes per DIN EN ISO 1127

DN	PN	dM	b	D
26.9	25	22.6	14	50.5
33.7	25	27	12	50.5
42.4	25	34	12	64
48.3	16	40	14	64

Clamp connection per DIN 32676 model C (Tri-Clamp) for pipes per ASME BPE

DN	PN	dM	b	D
3/4"	25	15.5	15	25
1"	25	22.6	14	50.5
1 1/2"	25	34	12	50.5
2"	16	46	14	64

Clamp connection per ISO 2852 for pipes per ISO 2037

DN	PN	dM	b	D
25	16	22.6	14	50.5
38	16	34	12	50.5
51	16	46	14	64

VARIVENT® connection for VARINLINE® access unit

Connection	PN	dM	A	D
Form F	25	40	66	50
Form N	25	58	84	68

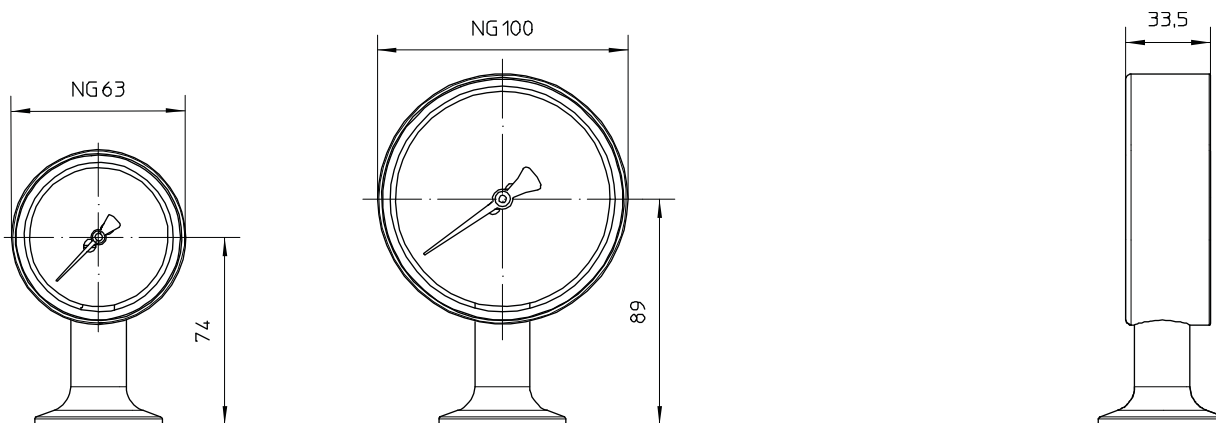
HYGIENIC screw-in thread, gasket without elastomer

G	PN (bar)	dM	h1	h2	SW
G1 A	50	24	45	28.5	36

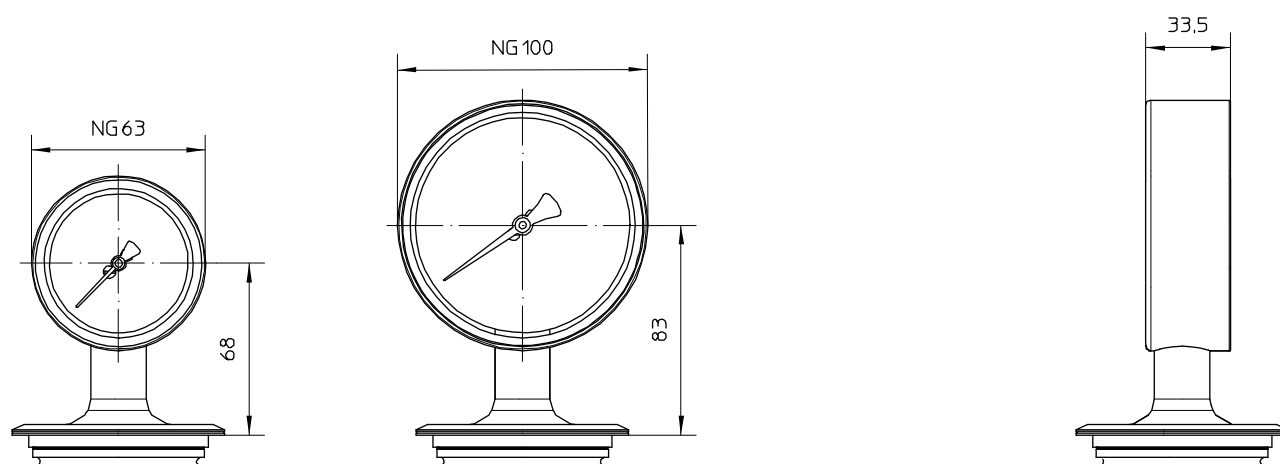
Screw-in thread with O ring gasket

G	PN (bar)	dM	h1	h2	SW
G1 A	50	24	33	20.5	41

One-piece design



Process connection 1 1/2" Clamp per DIN 32676, type C



Process connection VARIVENT® connection, Form N (D = 68)

Further variants in one-piece design upon request.

Order details

Bourdon tube pressure gauge NS 63/100, hygienic design for diaphragm seal operation, Type series BH8...

Order details BH8...			
BH8100	case design NS 63	degree of protection IP 65 without case filling	
BH8200	case design NS 100		
A53	nominal range [bar]	0...1	
A54		0...1.6	
A55		0...2.5	
A56		0...4	
A57		0...6	
A58		0...10	
A59		0...16	
A60		0...25	
A86		-1...0	
A87		-1...0.6	
A88		-1...1.5	
A89		-1...3	
A90		-1...5	
A91		-1...9	
A92		-1...15	
Q23	accuracy	class 1.6 for NS 63	
Q22		class 1.0 for NS 63 / NS 100	
J3	neck tube	multi-piece design (neck-tube and diaphragm seal)	
J4		one-piece design (neck tube and diaphragm seal) ¹	
K102	process connection	sanitary pipe connection with union nut per DIN 11851	DN 25
K103			DN 32
K104			DN 40
K105			DN 50
K162		aseptic screw joint collar connection with union nut per DIN 11864-1	DN 25
K163			DN 32
K165			DN 40
K166			DN 50
K124		clamp connection per ISO 2852 for pipes per ISO 2037	DN 25 (1")
K126			DN 38 (1 1/2")
K127			DN 51 (2")
K144		clamp connection per DIN 32676, model A (metric) for pipes per EN 10357 (DIN 11850)	DN 25
K146			DN 32
K147			DN 40
K148			DN 50
K213		clamp connection per DIN 32676, model B (OD, ISO) for pipes per DIN EN ISO 1127	DN 26,9
K214			DN 33,7
K215			DN 42,4
K216			DN 48,3
K134		clamp connection per DIN 32676, model C (Tri-Clamp) for pipes per ASME BPE	DN 3/4" ³
K136			DN 1"
K137			DN 1 1/2"
K138			DN 2"
K152		VARIVENT®-connection	Form F (D=50) for VARINLINE® access unit
K153			Form N (D=68) for VARINLINE® access unit
K172		HYGIENIC tubus	Ø 43.3 mm with screwing DN 25/PN 40
K185		DRD connection	nominal width DN 50 / nominal pressure PN 40
K195		screw-in thread	G 1 A with O-ring seal
K80			G 1 A with hygienic process connection (elastomer-free)
G1	wetted parts	1.4404/1.4435 (316L)	
G7.9		1.4435 (316L), delta ferrite content < 3% ²	

H1	overload protection	1.3 times
H2		2 times
P1	media temperature	-10...140 °C
P9		variant as in writing
R11	material window	Polycarbonate
R15		PPSU

Additional features (to be indicated if required)		
HY	surface roughness (wetted parts)	hygienic version as per EHEDG Doc.8 and ASME BPE SF3
HYG	surface roughness (case, neck tube, diaphragm seal)	$Ra \leq 0.76 \mu m^2$
T2	marking	on scale (red marked)
W1020	material certificate	per EN 10204-3.1, wetted parts
W1204	calibration certificate	per EN 10204-3.1, 3 measuring points
W1201		per EN 10204-3.1, 5 measuring points
W2660	as per UKCA regulations	
W4035	electropolishing	wetted parts
W4036		wetted parts and case surface
W4102	damping of movement	with integrated damping system
W4122	type plate	laser marked
W4126	autoclavable at 121 °C for 30 min ⁴	
W4128	autoclavable at 140 °C for 1 hour ⁴	
W4127	scale with fine division	

Order code (example): BH8200 - A56 - J3 - K126 - G1 - H1 - P1 - R11 - ...

¹ only for VARIVENT® connection, Form N (D= 68) and 1 1/2" clamp per DIN 32676, model C; further variants upon request

² only for one-piece design (J4)

³ for a function calculation and optimum system design it is necessary to specify the operation temperature

⁴ only for case design NS 63