

## Pressure gauge NS 63/100 for diaphragm seal operation Type series BH5



### Application area

- Pharmaceutical industry
- Food industry
- Biotechnology

### Features

- High quality case with bajonet ring NS 63/100
- Nominal ranges 0...2.5 to 0...25 bar, -1...1.5 bar to -1...15 bar
- Case and measuring element of stainless steel
- Degree of protection IP 65
- Accuracy class 1.6/1.0 as per EN 837-1
- Flush mounted diaphragm
- Small temperature error by means of reduced-volume measuring element
- Temperature range up to 140 °C
- Selected process connections with EHEDG certificate

### Options

- Approvals / Certificates
  - Material certificate per EN 10204-3.1
  - Calibration certificate per EN 10204-3.1
- As per UKCA regulations
- Case with liquid filling
- Hygienic design
- Autoclavable design

### Application

The pressure gauge NS 63/NS 100 is suitable for the use in applications in the food and pharmaceutical industry and biotechnology.

## Technical data

### Constructional design / case

Design:	High quality case with bayonet ring, material: st. steel mat.-no. 1.4301 (304) ventilation valve, material: PUR	
Nominal size:	NS 63 or NS 100	
Degree of protection per EN 60529:	IP 65	
Case filling:	Option: Glycerine-water Further liquid fillings upon request.	
Atmosph. pressure compensation:	Via ventilation valve.	
Case seal:	Material gasket: NBR	
Window:	Non-splintering laminated glass. Option: Non-splintering plastic (polycarbonate)	
Measuring element:	Bourdon tube - c-type  NS 63: screwed  NS 100: pressure connection welded to process connection	
System filling:	Synthetic oil FD1, free of silicone, FDA compliant	
Movement:	stainless steel segment	
Scale:	Pure aluminium, white with black inscription. Option: with red marking or with fixed reference pointer Special scale upon request	
Pointer:	NS 63: pure aluminium, black  NS 100: pure aluminium, black, with micro adjustment for zero point correction	
Weights:	NS 63 without filling:	approx. 0.5 kg
	NS 100 without filling	approx. 1.0 kg
	NS 63 with filling:	approx. 0.7 kg
	NS 100 with filling:	approx. 1.3 kg

### Process connection

Design:	Via diaphragm seal technology, see order details and product group D5
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### Material wetted parts

Membran:	See order details
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### Nominal range

See order details, further information upon request

Overload protection	Standard: 1.3 times
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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
Temperature influence:	Max. $\pm 0.4\%$ / 10K of measuring span per EN 837-1	
Process-temperature influence:	depending on active diaphragm diameter	
	dM 15.5 mm	upon request *
	dM 22.6...24 mm	$\leq 25$ mbar / 10 K *
	dM 27...30 mm	$\leq 20$ mbar / 10 K *
	dM 34...36 mm	$\leq 8$ mbar / 10 K *
	dM 40...46 mm	$\leq 5$ mbar / 10 K *
	dM 51...58 mm	$\leq 2$ mbar / 10 K *

\* A detailed calculation of accuracy can be submitted upon request.

### Hygienic design

The surface roughness of the wetted parts made of stainless steel are executed per EHEDG Doc.8 and ASME BPE SF3.

In case of choosing the additional feature HY, we guarantee the following surface roughness values:

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

Further versions of hygienic design upon request.

Autoclav. design:	Autoclavable without case filling, only. Please remove the ventilation valve before autoclaving.
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### Temperature ranges

Temperature ranges for the design of the diaphragm seal system (in combination with the pressure transmission fluid FD1):

	without filling	with filling
Ambient:	-10...50 °C	-10...50 °C
Media:	-10...140 °C	-10...140 °C

Adjusted design temperature ranges within the following maximum values are possible on request:

	without filling	with filling
Ambient:	-20...60 °C	-20...60 °C

Option:

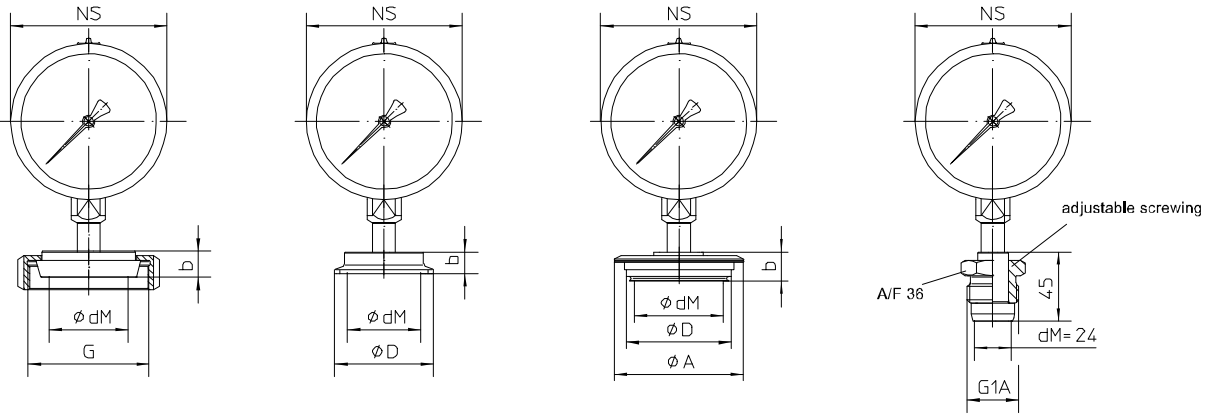
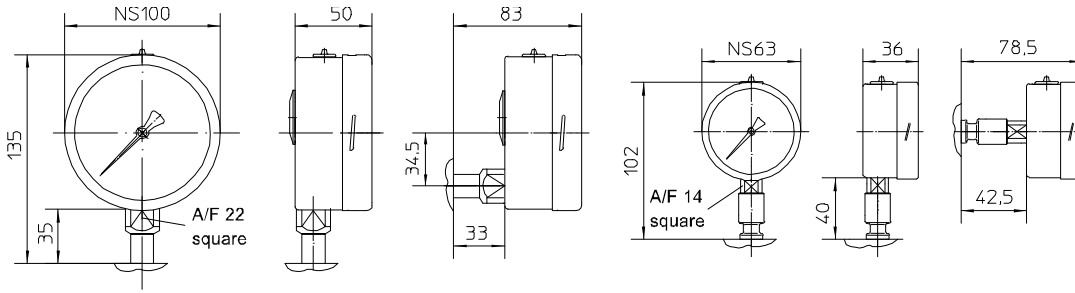
Autoclave temperature: 130 °C for 1 hour (without filling)

	without filling	with filling
Storage:	-20...60 °C	-20...60 °C

### Tests and certificates

Information on other models see order details or upon request.

# Dimensions



Sanitary pipe connection with union nut per DIN 11851

Clamp connection

VARIVENT-connection

Screw-in thread HYGIENIC G1A adjustable

All dimensions are in mm

## 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"

## 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 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 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

## 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

## VARIVENT® connection for VARINLINE® access unit

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

## Order details

Pressure gauge NS 63/100 for diaphragm seal operation			
BH5100	case design IP 65, NS 63	without liquid filling	process connection bottom
BH5110			process connection at back
BH5120		with liquid filling	process connection bottom
BH5130			process connection at back
BH5200	case design IP 65, NS 100	without liquid filling	process connection bottom
BH5210			process connection at back
BH5220		with liquid filling	process connection bottom
BH5230			process connection at back
A55	nominal range [bar]	0...2,5	
A56		0...4	
A57		0...6	
A58		0...10	
A59		0...16	
A60		0...25	
A88		-1...1,5	
A89		-1...3	
A90		-1...5	
A91		-1...9	
A92		-1...15	
K102		process connection <sup>1</sup> material: ASTM (316L)	sanitary pipe connection with union nut per DIN 11851 <sup>2</sup>
K103	DN 32		
K104	DN 40		
K105	DN 50		
K124	Clamp connection per ISO 2852 for pipes per ISO 2037 <sup>2</sup>		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) <sup>2</sup>		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 <sup>2</sup>		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 <sup>2</sup>		DN 3/4" <sup>3,4</sup>
K136			DN 1"
K137			DN 1 1/2"
K138			DN 2"
K152	VARIVENT® connection <sup>2</sup>		Form F (D=50) for VARINLINE® access unit
K153		Form N (D=68) for VARINLINE® access unit	
K80	screw-in thread HYGIENIC	G 1 A rotatable, gasket-free	
	surface roughness	standard	
HY	(wetted parts)	Hygienic version as per EHEDG Doc.8 and ASME BPE SF3	

Additional features (to be indicated if required)		
T2	marking	on scale (please specify)
T3		fixed reference pointer (please specify) <sup>5</sup>
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	
W4073	autoclavable (130 °C for 1 hour) <sup>6</sup>	
W4090	extended temperature range	

Order code (example): **BH5200 – A56 – K102 - ...**

<sup>1</sup> Further process connections (diaphragm seals) upon request.

<sup>2</sup> EHEDG certified only in connection with hygienic design (order code option HY). EHEDG certificate valid only if gaskets are used that are listed in the "EHEDG position paper"

<sup>3</sup> For case NS 63 only.

<sup>4</sup> For a function calculation and optimum system design it is necessary to specify the operation temperature.

<sup>5</sup> For case NS 100 only.

<sup>6</sup> For case without liquid filling, single strength glass and diaphragm diameter (dM) ≥ 34 only.