

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 (Macro-lon) | |
| 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 |
|---------|---|

Material wetted parts

| | |
|----------|-------------------|
| Membran: | See order details |
|----------|-------------------|

Nominal range

See order details, further information upon request

| | |
|---------------------|---------------------|
| Overload protection | Standard: 1.3 times |
|---------------------|---------------------|

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 | ≤ 25 mbar / 10 K * |
| | dM 27...30 mm | ≤ 20 mbar / 10 K * |
| | dM 34...36 mm | ≤ 8 mbar / 10 K * |
| | dM 40...46 mm | ≤ 5 mbar / 10 K * |
| | dM 51...58 mm | ≤ 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 according to 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. |
|-------------------|---|

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:

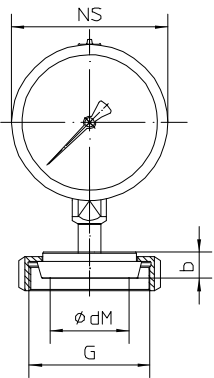
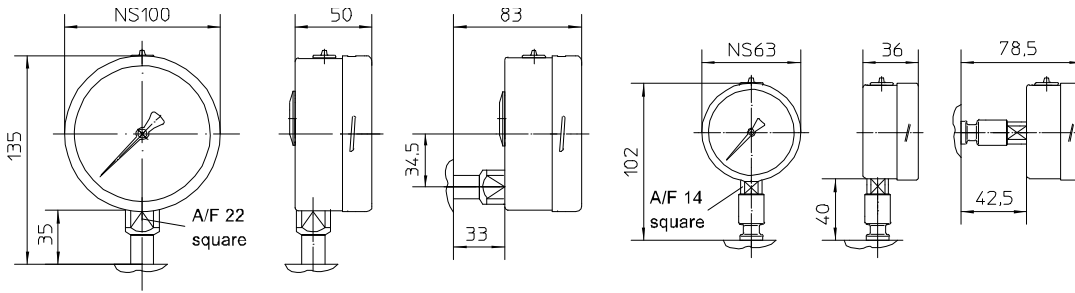
Autoclave temperature: 130 °C for 1 hour (without filling)

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

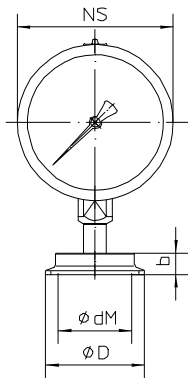
Tests and certificates

Information on other models see order details or upon request.

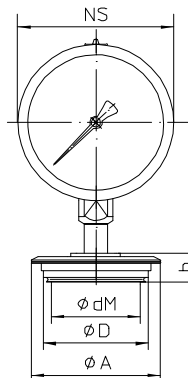
Dimensions



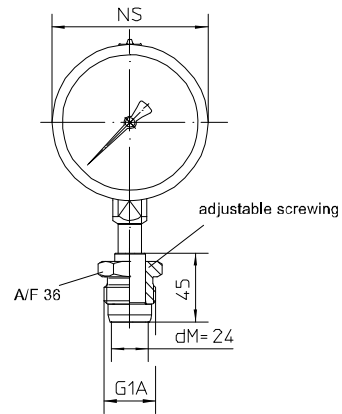
Sanitary pipe connection with union nut per DIN 11851



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, Type series BH5

| Order details BH5... | | | |
|----------------------|---|--|--|
| 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 ¹ material: ASTM (316L) | sanitary pipe connection with union nut per DIN 11851 ² |
| K103 | DN 32 | | |
| K104 | DN 40 | | |
| K105 | DN 50 | | |
| K124 | Clamp connection per ISO 2852 for pipes per ISO 2037 ² | | 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) ² | | 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 ² | | 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 ² | | DN 3/4" ^{3,4} |
| K136 | | | DN 1" |
| K137 | | | DN 1 1/2" |
| K138 | | | DN 2" |
| K152 | VARIVENT® connection ² | | 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) ⁵ |
| 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) ⁶ | |
| W4090 | extended temperature range | |

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

¹ further process connections (diaphragm seals) upon request

² 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"

³ for case NS 63 only

⁴ for a function calculation and optimum system design it is necessary to specify the operation temperature

⁵ for case NS 100 only

⁶ for case without liquid filling and single strength glass only