

Bypass level indicator With magnetic display Model BNA

WIKA data sheet LM 10.01



Applications

- Continuous level indication without power supply
- Indication of the level proportional to height
- Individual design and corrosion resistant materials make the products suitable for a broad range of applications
- Chemical, petrochemical industry, oil and natural gas extraction (on- and offshore), shipbuilding, machine building, power generating equipment, power plants
- Process water and drinking water treatment, food industry, pharmaceutical industry

Special features

- Process- and system-specific production
- Operating limits:
 - Operating temperature: $T = -196 \dots +450 \text{ }^\circ\text{C}$
 - Operating pressure: $P = \text{vacuum to } 400 \text{ bar}$
 - Limit density: $\rho \geq 340 \text{ kg/m}^3$
- Wide variety of different process connections and materials
- Mounting of level sensors and magnetic switches possible as an option
- Explosion-protected versions

Description

The bypass level indicator model BNA consists of a bypass chamber, which, as a communicating tube, is connected laterally to a vessel via at least 2 process connections (flanged, threaded or welded). Through this type of arrangement, the level in the bypass chamber corresponds to the level in the vessel. The float with a built-in permanent magnetic system, which is mounted within the bypass chamber, transmits the liquid level, contact-free, to the magnetic display mounted to the outside of the bypass chamber. In this are fitted, at 10 mm intervals, two-coloured plastic rollers or stainless steel flaps with bar magnets.



Bypass level indicator, model BNA with level sensor and magnetic switch

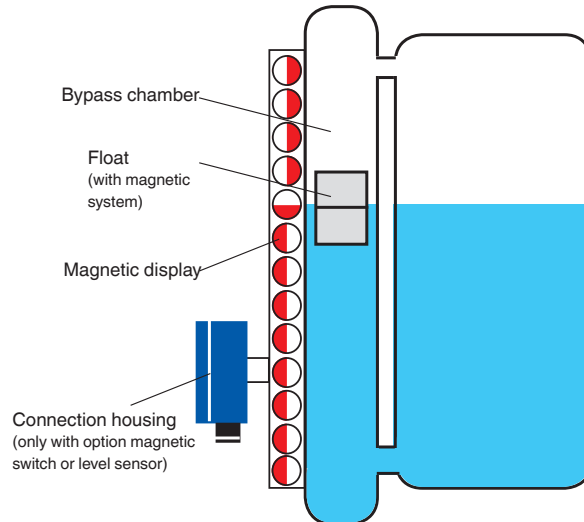
Through the magnetic field of the permanent magnetic system in the float, the display elements, through the wall of the bypass chamber, are turned through 180° . For an increasing level from white to red; for a falling level from red to white.

Thus the bypass level indicator clearly displays the level of a vessel **without power supply**.

Further special features

- Simple, robust and solid design, long service life
- Bypass chamber and float from stainless steel 1.4571, 1.4404 or special materials
- Pressure- and gas-tight separation between measuring and display chamber
- Measuring and indicating of the level of aggressive, combustible, toxic, hot and contaminated media
- Functioning of the magnetic display guaranteed even in the case of power failures
- By using a variety of corrosion-resistant materials, applicable for virtually all industrial applications
- Continuous measurement of levels, independent of physical and chemical changes of the media such as: Foaming, conductivity, dielectric constant, vapours, bubble formation, boiling effects
- Interface-layer level measurement from Δ density 100 kg/m^3
- Special versions: Food compliant, coatings, liquid gas, heating jacket

Illustration of the principle

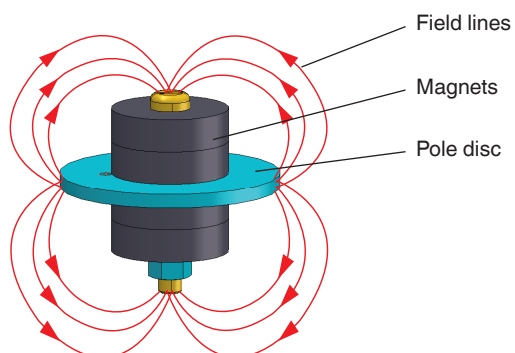


Design and operating principle

- In a communicating bypass chamber mounted to the side of a vessel a float moves with the level of the medium to be measured.
- The magnetic field of the radial-symmetric magnetic system positioned in the float activates the magnetic display attached to the outside of the bypass chamber as well as the switching and measuring elements.

Magnetic system

The magnetic system is assembled from a pole disc and various magnets. These can be individually adapted to the different chamber dimensions and for temperatures up to $450 \text{ }^\circ\text{C}$.



Model overview

| Bypass level indicator | Approval | | | | | | | Material | Max. pressure in bar | Medium temperature in °C |
|---|----------|------|----------|-----------|----|-----|-----|---|----------------------|--------------------------|
| | with-out | Ex c | Ex c, GL | Ex c, DNV | GL | DNV | ABS | | | |
| Compact version, model BNA-C | x | x | x | x | x | x | | Stainless steel 1.4571 (316Ti) | 40 | -196 ... +150 |
| Standard version, model BNA-S | x | x | x | x | x | x | x | Stainless steel 1.4571 (316Ti), 1.4404 (316L), 1.4401/1.4404 (316/316L) | 64 | -196 ... +450 |
| High-pressure version, model BNA-H | x | x | x | x | x | x | | Stainless steel 1.4571 (316Ti), 1.4404 (316L) | 400 | -196 ... +450 |
| Plastic version, model BNA-P | x | | | | | | | PP, PVDF | 6 | -10 ... +100 |
| DUPlus version, standard, model BNA-SD | x | x | | | | | | Stainless steel 1.4571 (316Ti), 1.4404 (316L), 1.4401/1.4404 (316/316L) | 64 | -196 ... +450 |
| DUPlus version, high pressure, model BNA-HD | x | x | | | | | | Stainless steel 1.4571 (316Ti), 1.4404 (316L), 1.4401/1.4404 (316/316L) | 160 | -196 ... +450 |
| Liquid gas/KOPlus version, model BNA-L | x | x | | | | | | Stainless steel 1.4571 (316Ti), 1.4404 (316L) | 25 | -60 ... +300 |
| Special materials, model BNA-X | x | x | | | | | | Stainless steel 6Mo 1.4547 (UNS S31254) | 250 | -196 ... +450 |
| | x | | | | | | | Stainless steel 1.4571 (316Ti) with internal coating E-CTFE, ETFE or PTFE | 16 | depending on the medium |
| | x | x | x | x | x | x | | Titanium 3.7035 | 64 | -196 ... +450 |
| | x | x | x | x | x | x | | Hastelloy C276 (2.4819) | 160 | -196 ... +450 |
| Heating jacket version, model BNA-J | x | x | x | | x | | | Stainless steel 1.4571 (316Ti), 1.4404 (316L) | 64 | -60 ... +450 |

Ex approvals

| Explosion protection | Ignition protection type | Model | Zone | Approval number |
|----------------------|--------------------------|---|---------------|---|
| ATEX | Ex c | BNA-S, BNA-H, BNA-C, BNA-SD, BNA-HD, BNA-X, BNA-J | Zone 0/1, gas | KEMA 02 ATEX 2106 X II 1/2 G c T1 ... T6 |
| | Ex c + GL | BNA-S, BNA-H, BNA-C, BNA-X, BNA-J | Zone 0/1, gas | KEMA 02 ATEX 2106 X II 1/2 G c T1 ... T6 + GL - 35 949 - 87 |
| | Ex c + DNV | BNA-S, BNA-H, BNA-C, BNA-X | Zone 0/1, gas | KEMA 02 ATEX 2106 X II 1/2 G c T1 ... T6 + DNV - A-11451 |

Type approval

| Approval | Model | Approval number |
|----------|-----------------------------------|-----------------------|
| GL | BNA-S, BNA-H, BNA-C, BNA-X, BNA-J | GL - 35 949 - 87 HH |
| DNV | BNA-S, BNA-H, BNA-C, BNA-X | DNV A-11451 |
| ABS | BNA-S | ABS 07-HG218425-1-PDA |
| GOST-R | all | 0959333 |

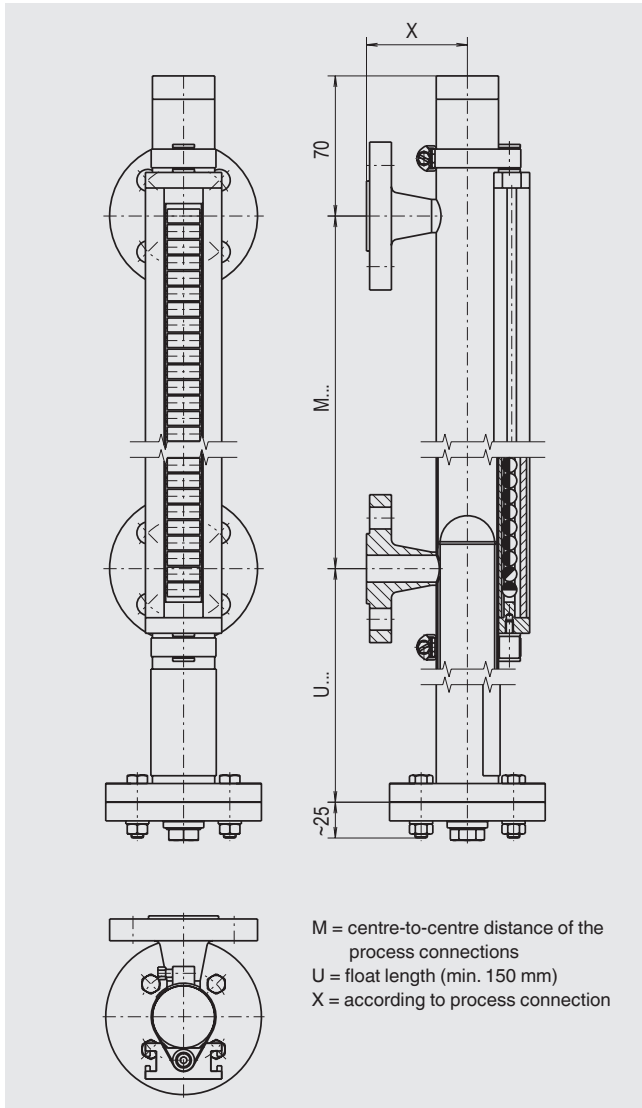
Detailed information on floats, magnetic displays, sensors (reed chains and magnetostrictive) and magnetic switches can be found in the following data sheets:

- Float; model BFT; see data sheet LM 10.02
- Magnetic display; model BMD; see data sheet LM 10.03
- Reed sensor; model BLR; see data sheet LM 10.04
- Magnetostrictive sensor; model BLM; see data sheet LM 10.05
- Magnetic switch; model BGU; see data sheet LM 10.06

Further approvals on request

Bypass level indicator, compact version, model BNA-C

Bypass chamber from stainless steel



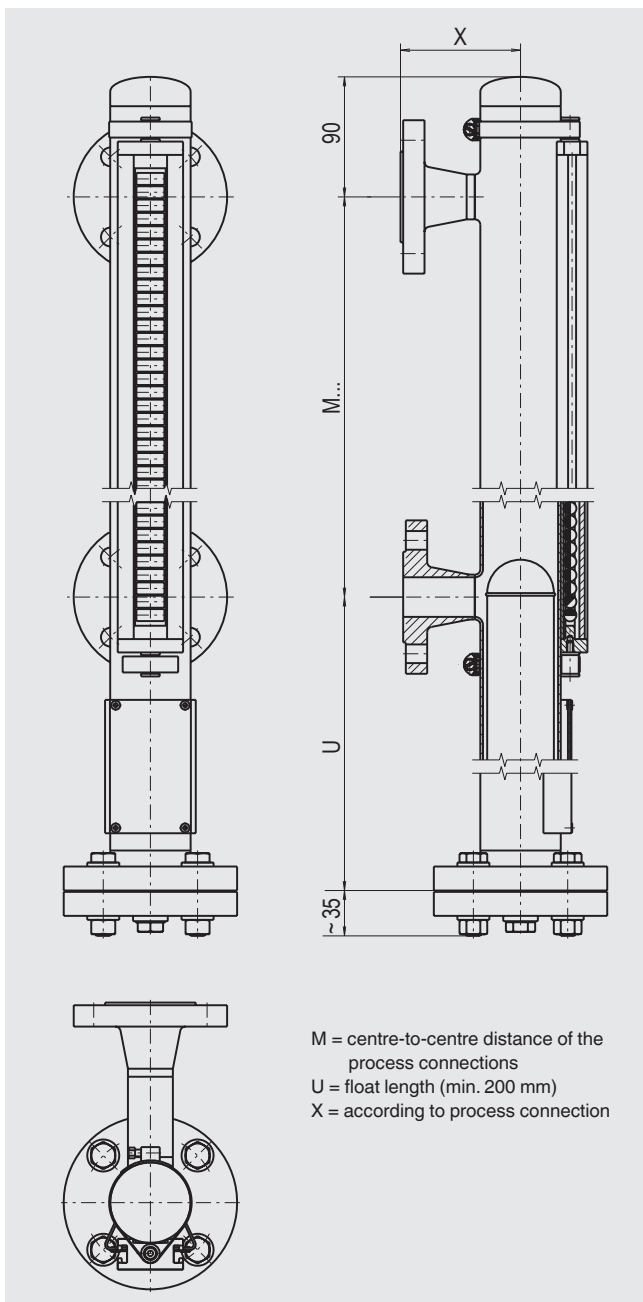
Specifications

| | |
|---------------------------|--|
| Bypass chamber | Ø 42.2 x 2 mm, max. 40 bar |
| Chamber end top | Flat top, flange or threaded connection Options: (see page 14) ■ Vent screw ■ Vent valve ■ Vent flange |
| Chamber end bottom | Flange connection or threaded connection Options: (see page 14) ■ Drain plug ■ Drain valve ■ Drain flange |
| Process connections | 2 x lateral (options see page 15) Flange EN 1092-1, DN 10 - DN 50, PN 6 - PN 40 Flange DIN, DN 10 - DN 50, PN 6 - PN 40 Flange ANSI B 16.5, 1/2" - 2.5", class 150 - class 300 Weld stub 1/2" - 1" Threaded bushing G/NPT 1/2" - 1" Threaded nipple G/NPT 1/2" - 1" |
| Centre-to-centre distance | Min. 150 mm to max. 5,000 mm |
| Material | Stainless steel 1.4571 (316Ti) |
| Nominal pressure | Max. 40 bar |
| Temperature range | -196 ... +150 °C |
| Float | Cylindrical float, model BFT-H32, see data sheet LM 10.02 |
| Magnetic display | Magnetic display; model BMD-S; see data sheet LM 10.03 |
| Level sensor | Reed sensor, model BLR, see data sheet LM 10.04 Magnetostrictive sensor, model BLM, see data sheet LM 10.05 |
| Magnetic switches | Magnetic switch, model BGU, see data sheet LM 10.06 |
| Approvals | Ex c, GL, DNV, GOST-R |

Special versions on request

Bypass level indicator, standard version, model BNA-S

Bypass chamber from stainless steel



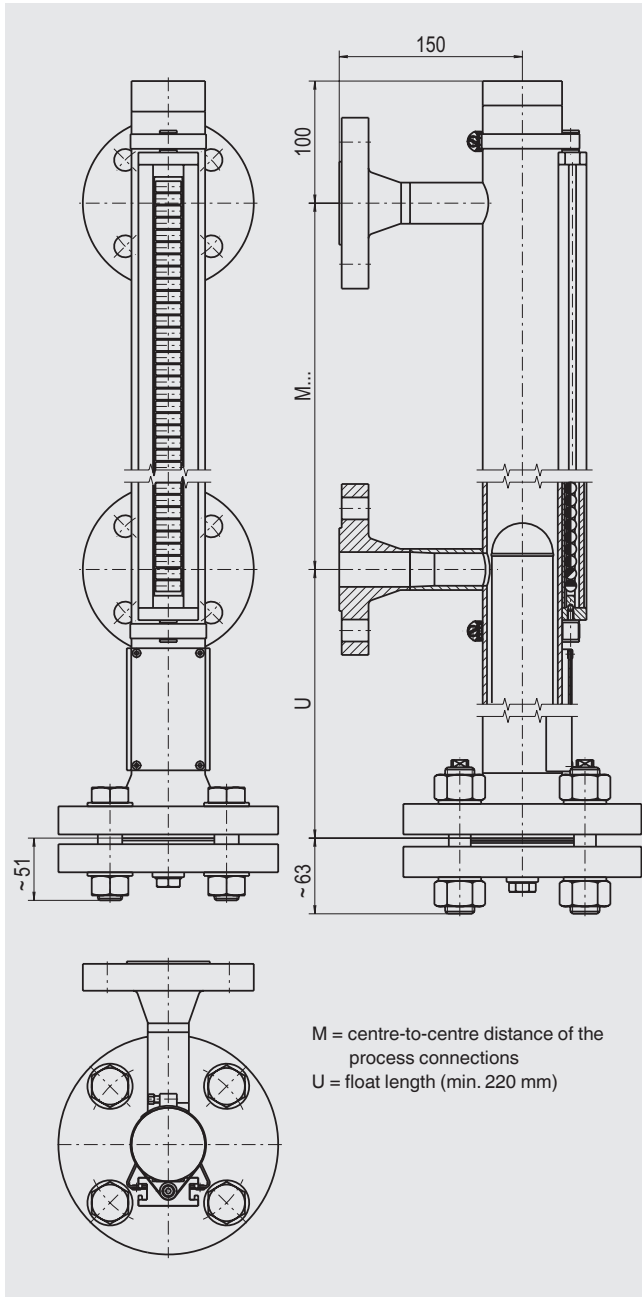
Specifications

| | |
|---------------------------|---|
| Bypass chamber | <ul style="list-style-type: none"> Ø 60.3 x 2 mm, max. 40 bar Ø 60.3 x 2.77 mm, max. 64 bar |
| Chamber end top | <ul style="list-style-type: none"> Flat top or flange connection Options: (see page 14) <ul style="list-style-type: none"> ■ Vent screw ■ Vent valve ■ Vent flange |
| Chamber end bottom | <ul style="list-style-type: none"> Flange connection Options: (see page 14) <ul style="list-style-type: none"> ■ Drain plug ■ Drain valve ■ Drain flange |
| Process connections | <ul style="list-style-type: none"> 2 x lateral (options see page 15) Flange EN 1092-1, DN 10 - DN 100, PN 6 - PN 63 Flange DIN, DN 10 - DN 100, PN 6 - PN 64 Flange ANSI B 16.5, 1/2" - 4", class 150 - class 600 Weld stub 1/2" - 1" Threaded bushing G/NPT 1/2" - 1" Threaded nipple G/NPT 1/2" - 1" |
| Centre-to-centre distance | Min. 150 mm to max. 6,000 mm (larger distances on request) |
| Material | Stainless steel 1.4571 (316Ti), 1.4404 (316L), 1.4401/1.4404 (316/316L) |
| Nominal pressure | Max. 64 bar |
| Temperature range | -196 ... +450 °C |
| Float | Cylindrical float, model BFT-H or corrugated float, model BFT-S, see data sheet LM 10.02 |
| Magnetic display | <ul style="list-style-type: none"> Standard version, model BMD-S: < 200 °C High-temperature version, model BMD-F: > 200 °C, see data sheet LM 10.03 |
| Level sensor | <ul style="list-style-type: none"> Reed sensor, model BLR, see data sheet LM 10.04 Magnetostrictive sensor, model BLM, see data sheet LM 10.05 |
| Magnetic switches | Magnetic switch, model BGU, see data sheet LM 10.06 |
| Approvals | Ex c, GL, DNV, ABS, GOST-R |

Special versions on request

Bypass level indicator, high-pressure version, model BNA-H

Bypass chamber from stainless steel



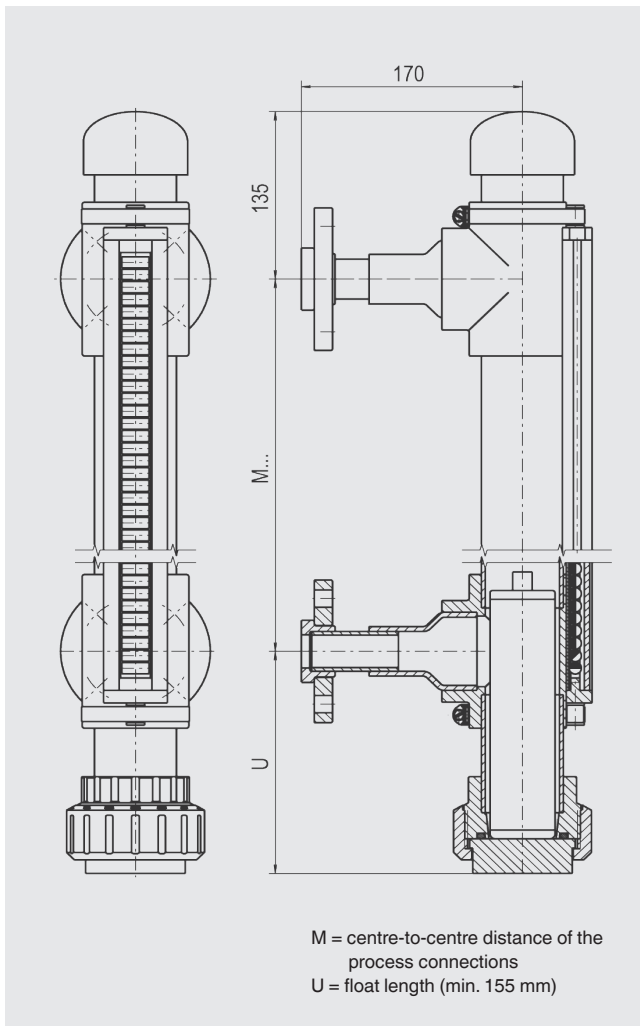
Specifications

| | |
|---------------------------|--|
| Bypass chamber | <p>Stainless steel 1.4571: Ø 60.3 x 3.91 mm, max. 160 bar Ø 76.1 x 5 mm, max. 160 bar Ø 71 x 7.5 mm, max. 250 bar Ø 76.1 x 10 mm, max. 420 bar</p> <p>Stainless steel 1.4404: Ø 60.3 x 3.91 mm, max. 100 bar Ø 60.3 x 5.54 mm, max. 150 bar Ø 73 x 7.01 mm, max. 150 bar</p> |
| Chamber end top | <p>Flat top or flange connection Options: (see page 14) ■ Vent screw ■ Vent valve ■ Vent flange</p> |
| Chamber end bottom | <p>Flange connection Options: (see page 14) ■ Drain plug ■ Drain valve ■ Drain flange</p> |
| Process connections | <p>2 x lateral (options see page 15) Flange EN 1092-1, DN 10 - DN 100, PN 63 - PN 400 Flange DIN, DN 10 - DN 100, PN 64 - PN 400 Flange ANSI B 16.5, 1/2" - 4", class 600 - class 2,500 Weld stub 1/2" - 1" Threaded bushing G/NPT 1/2" - 1" Threaded nipple G/NPT 1/2" - 1"</p> |
| Centre-to-centre distance | <p>Min. 150 mm to max. 6,000 mm (larger distances on request)</p> |
| Material | <p>Stainless steel 1.4571 (Ø 60.3 x 3.91 mm, Ø 76.1 x 5 mm, Ø 71 x 7.5 mm, Ø 76.1 x 10 mm) or stainless steel 1.4404 (Ø 60.3 x 3.91 mm, Ø 60.3 x 5.54 mm, Ø 73 x 7.01 mm)</p> |
| Nominal pressure | <p>Max. 400 bar</p> |
| Temperature range | <p>-196 ... +450 °C</p> |
| Float | <p>Cylindrical float, model BFT-H, ball-segment float, model BFT-K or foam float, model BFT-F, see data sheet LM 10.02</p> |
| Magnetic display | <p>Standard version, model BMD-S: < 200 °C High-temperature version, model BMD-F: > 200 °C, see data sheet LM 10.03</p> |
| Level sensor | <p>Reed sensor, model BLR, see data sheet LM 10.04 Magnetostrictive sensor, model BLM, see data sheet LM 10.05</p> |
| Magnetic switches | <p>Magnetic switch, model BGU, see data sheet LM 10.06</p> |
| Approvals | <p>Ex c, GL, DNV, GOST-R</p> |

Special versions on request

Bypass level indicator, plastic version, model BNA-P

Bypass chamber and float from PVDF or PP



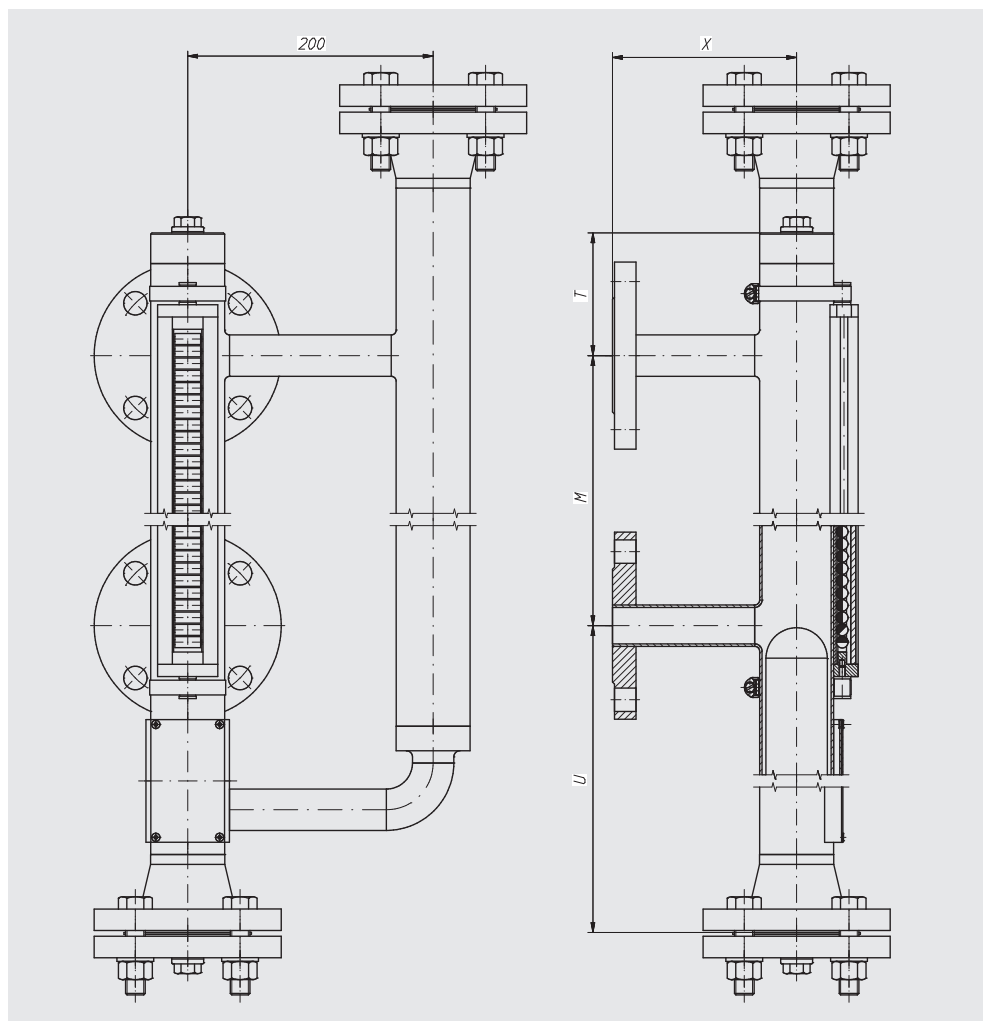
Specifications

| | |
|---------------------------|---|
| Bypass chamber | Ø 63 x 3 mm, max. 6 bar |
| Chamber end top | Welding cap, threaded connection Options: (see page 14) ■ Vent screw ■ Vent valve ■ Vent flange |
| Chamber end bottom | Threaded connection Options: (see page 14) ■ Drain plug ■ Drain valve ■ Drain flange |
| Process connections | 2 x lateral (options see page 15) Flange EN 1092-1, DN 15 - DN 50, PN 16 Flange DIN, DN 15 - DN 50, PN 16 Flange ANSI B 16.5, 1/2" - 2", class 150 Weld stub 1/2" - 1" Threaded bushing G/NPT 1/2" - 1" Threaded nipple G/NPT 1/2" - 1" |
| Centre-to-centre distance | Min. 200 mm to max. 4,000 mm (larger distances on request) |
| Material | PVDF or PP |
| Nominal pressure | Max. 6 bar |
| Temperature range | PVDF: -10 ... +100 °C PP: -10 ... +80 °C |
| Float | Plastic float, model BFT-P, see data sheet LM 10.02 |
| Magnetic display | Standard version, model BMD-S, see data sheet LM 10.03 |
| Level sensor | Reed sensor, model BLR, see data sheet LM 10.04 Magnetostrictive sensor, model BLM, see data sheet LM 10.05 |
| Magnetic switches | Magnetic switch, model BGU, see data sheet LM 10.06 |
| Approvals | - |

Special versions on request

Bypass level indicator, DUPlus version, standard, model BNA-SD

Bypass chamber from stainless steel



Specifications

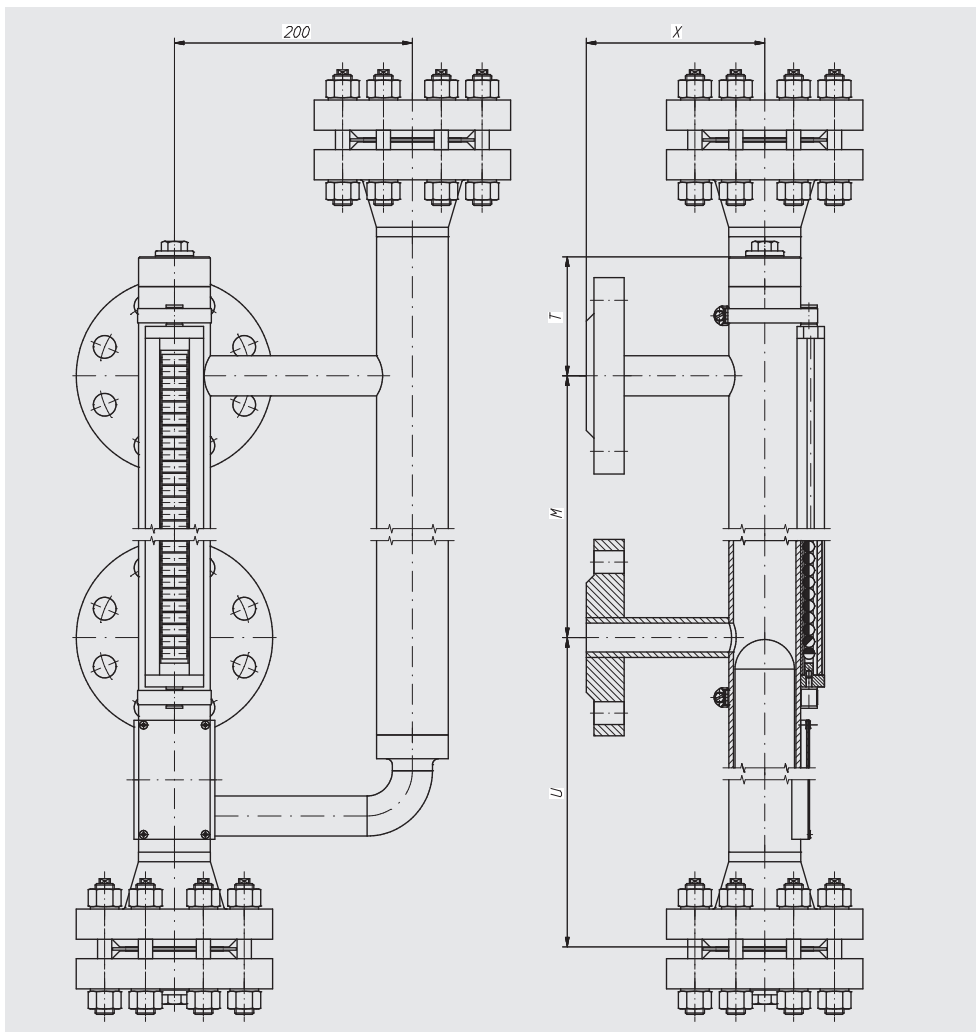
| | |
|----------------------------|--|
| Bypass chamber | <p>Ø 60.3 x 2 mm, max. 40 bar</p> <p>Ø 60.3 x 2.77 mm, max. 64 bar</p> |
| Chamber end top | <p>Flange connection</p> <p>Options: (see page 14)</p> <ul style="list-style-type: none"> ■ Vent screw ■ Vent valve ■ Vent flange |
| Chamber end bottom | <p>Flat top or flange connection</p> <p>Options: (see page 14)</p> <ul style="list-style-type: none"> ■ Drain plug ■ Drain valve ■ Drain flange |
| Process connections | <p>2 x lateral (options see page 15)</p> <p>Flange DIN, DN 10 - DN 100, PN 6 - PN 64</p> <p>Flange ANSI B 16.5, 1/2" - 4", class 150 - class 600</p> <p>Weld stub 1/2" - 1"</p> <p>Threaded bushing G/NPT 1/2" - 1"</p> <p>Threaded nipple G/NPT 1/2" - 1"</p> |
| External sensor connection | <p>Flange EN 1092-1, DN 50, PN 6 - PN 64</p> <p>Flange DIN, DN 50, PN 6 - PN 64</p> <p>Flange ANSI B 16.5, 2" class 150 - class 600</p> <p>Female thread G/NPT 3/4" - 2"</p> |

| | |
|---------------------------|---|
| Centre-to-centre distance | Min. 150 mm to max. 6,000 mm (larger distances on request) |
| Material | Stainless steel 1.4571, 1.4404 or 1.4401/1.4404 |
| Nominal pressure | Max. 64 bar |
| Temperature range | -196 ... +450 °C |
| Float | Cylindrical float, model BFT-H or corrugated float, model BFT-S, see data sheet LM 10.02 |
| Magnetic display | Standard version, model BMD-S: < 200 °C High-temperature version, model BMD-F: > 200 °C, see data sheet LM 10.03 |
| Level sensor | Reed sensor, model BLR, see data sheet LM 10.04 Magnetostrictive sensor, model BLM, see data sheet LM 10.05 Guided wave radar, model GTR, see data sheet LM 20.05 |
| Magnetic switches | Magnetic switch, model BGU, see data sheet LM 10.06 |
| Approvals | Ex c, GOST-R |

Special versions on request

Bypass level indicator, DUPlus version, high pressure, model BNA-HD

Bypass chamber from stainless steel



Specifications

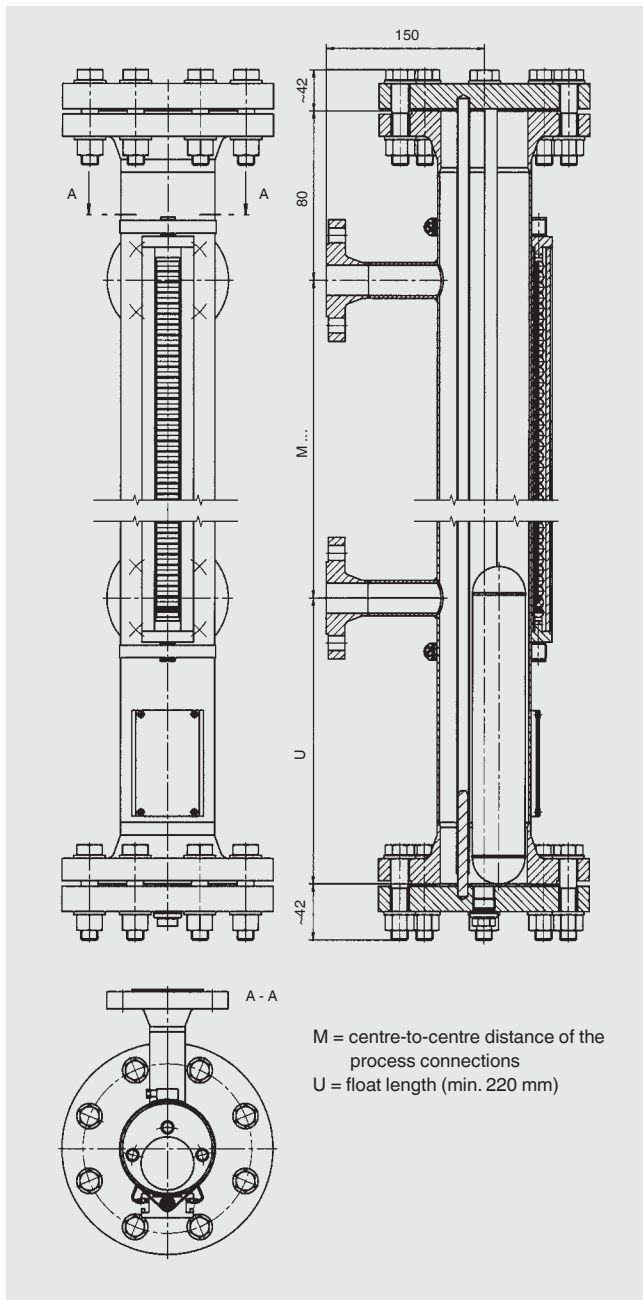
| | |
|----------------------------|---|
| Bypass chamber | Ø 60.3 x 3.91 mm, max. 160 bar |
| Chamber end top | <ul style="list-style-type: none"> Flange connection Options: (see page 14) <ul style="list-style-type: none"> ■ Vent screw ■ Vent valve ■ Vent flange |
| Chamber end bottom | <ul style="list-style-type: none"> Flat top or flange connection Options: (see page 14) <ul style="list-style-type: none"> ■ Drain plug ■ Drain valve ■ Drain flange |
| Process connections | <ul style="list-style-type: none"> 2 x lateral (options see page 15) Flange DIN, DN 10 - DN 100, PN 64 - PN 160 Flange ANSI B 16.5, 1/2" - 4", class 600 - class 1,500 Weld stub 1/2" - 1" Threaded bushing G/NPT 1/2" - 1" Threaded nipple G/NPT 1/2" - 1" |
| External sensor connection | <ul style="list-style-type: none"> Flange EN 1092-1, DN 50, PN 6 - PN 160 Flange DIN, DN 50, PN 6 - PN 160 Flange ANSI B 16.5, 2" class 150 - class 1,500 Female thread G/NPT 3/4" - 2" |

| | |
|---------------------------|---|
| Centre-to-centre distance | Min. 150 mm to max. 6,000 mm (larger distances on request) |
| Material | Stainless steel 1.4571, 1.4404 or 1.4401/1.4404 |
| Nominal pressure | Max. 160 bar |
| Temperature range | -196 ... +450 °C |
| Float | Cylindrical float, model BFT-H, corrugated float, model BFT-S, ball-segment float, model BFT-K or foam float, model BFT-F, see data sheet LM 10.02 |
| Magnetic display | <ul style="list-style-type: none"> Standard version, model BMD-S: < 200 °C High-temperature version, model BMD-F: > 200 °C, see data sheet LM 10.03 |
| Level sensor | <ul style="list-style-type: none"> Reed sensor, model BLR, see data sheet LM 10.04 Magnetostrictive sensor, model BLM, see data sheet LM 10.05 Guided wave radar, model GTR, see data sheet LM 20.05 |
| Magnetic switches | Magnetic switch, model BGU, see data sheet LM 10.06 |
| Approvals | Ex c, GOST-R |

Special versions on request

Bypass level indicator, liquid gas/KOPlus version, model BNA-L

Bypass chamber from stainless steel

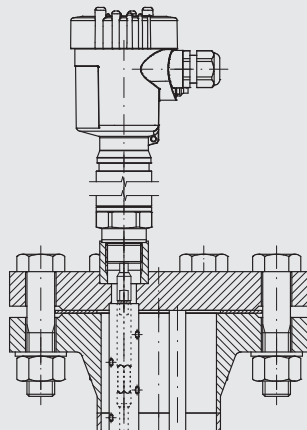


Specifications

| | |
|---------------------------|---|
| Bypass chamber | <ul style="list-style-type: none"> Ø 88.9 x 2 mm, max. 25 bar Ø 88.9 x 2.9 mm, max. 40 bar |
| Chamber end top | <ul style="list-style-type: none"> Flange connection Options: (see page 14) <ul style="list-style-type: none"> ■ Vent screw ■ Vent valve ■ Vent flange |
| Chamber end bottom | <ul style="list-style-type: none"> Flange connection Options: (see page 14) <ul style="list-style-type: none"> ■ Drain plug ■ Drain valve ■ Drain flange |
| Process connections | <ul style="list-style-type: none"> 2 x lateral (options see page 15) Flange EN 1092-1, DN 10 - DN 100, PN 6 - PN 63 Flange DIN, DN 10 - DN 100, PN 6 - PN 64 Flange ANSI B 16.5, 1/2" - 4", class 150 - class 600 Weld stub 1/2" - 1" Threaded bushing G/NPT 1/2" - 1" Threaded nipple G/NPT 1/2" - 1" |
| Centre-to-centre distance | Min. 150 mm to max. 6,000 mm (larger distances on request) |
| Material | <ul style="list-style-type: none"> Stainless steel 1.4571 (316Ti) (Ø 88.9 x 2 mm, Ø 88.9 x 2.9 mm) Stainless steel 1.4404 (316L) (Ø 88.9 x 2 mm) |
| Nominal pressure | Max. 40 bar |
| Temperature range | -60 ... +300 °C |
| Float | Cylindrical float, model BFT-H, see data sheet LM 10.02 |
| Magnetic display | <ul style="list-style-type: none"> Standard version, model BMD-S: < 200 °C High-temperature version, model BMD-F: > 200 °C, see data sheet LM 10.03 |
| Level sensor | <ul style="list-style-type: none"> Reed sensor, model BLR, see data sheet LM 10.04 Magnetostrictive sensor, model BLM, see data sheet LM 10.05 Guided wave radar, model GTR (for KOPlus version), see data sheet LM 20.05 |
| Magnetic switches | Magnetic switch, model BGU, see data sheet LM 10.06 |
| Approvals | Ex c, GOST-R |

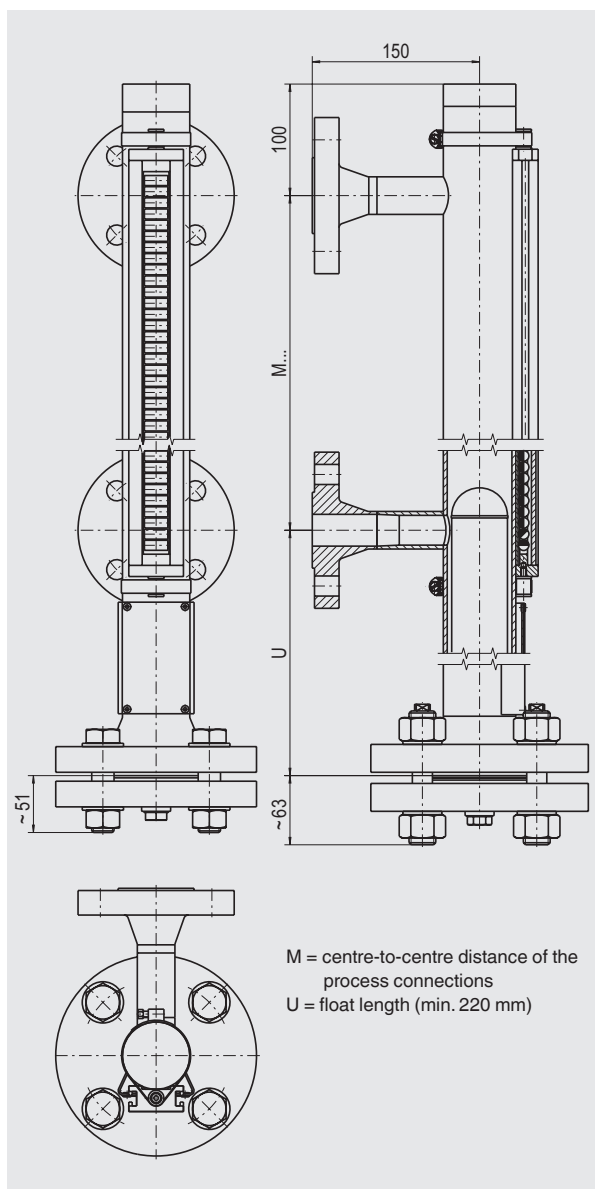
Special versions on request

KOPlus version



Bypass level indicator, special materials, model BNA-X

Bypass chamber from Titanium, Hastelloy or stainless steel 6Mo



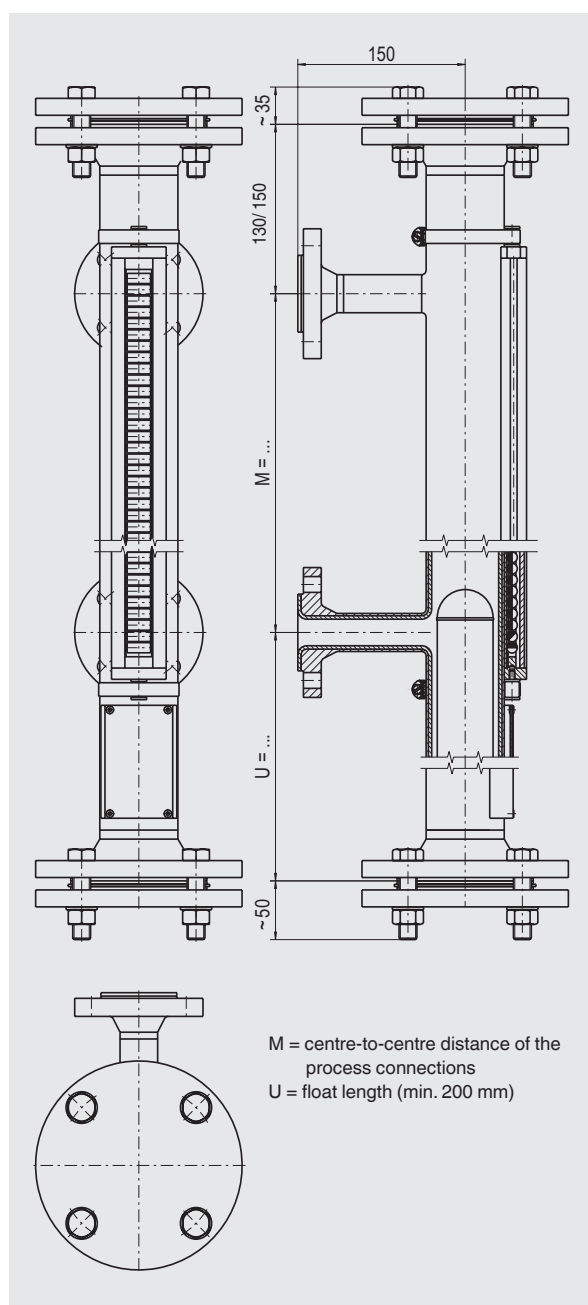
| Specifications | | | |
|--|--|--|--|
| Material ¹⁾ | Titanium 3.7035 | Hastelloy C276 | Stainless steel 6Mo 1.4547 (UNS S31254) |
| Bypass chamber | Ø 60.3 x 2 mm, max. 40 bar Ø 60.3 x 2.77 mm, max. 64 bar | Ø 60.3 x 2.77 mm, max. 64 bar Ø 60.3 x 3.91 mm, max. 160 bar | Ø 60.3 x 2.77 mm, max. 64 bar Ø 60.3 x 3.91 mm, max. 160 bar Ø 60.3 x 5.54 mm, max. 250 bar |
| Chamber end top | Flat top or flange connection Options: (see page 14) ■ Vent screw ■ Vent valve ■ Vent flange | | |
| Chamber end bottom | Flange connection Options: (see page 14) ■ Drain plug ■ Drain valve ■ Drain flange | | |
| Process connections (2 x lateral, options see page 15) | Flange EN 1092-1, DN 10 - DN 100, PN 6 - PN 63 Flange DIN, DN 10 - DN 100, PN 6 - PN 64 Flange ANSI B 16.5, 1/2" - 4", class 150 - class 600 | Flange EN 1092-1, DN 10 - DN 100, PN 6 - PN 400 Flange DIN, DN 10 - DN 100, PN 6 - PN 400 Flange ANSI B 16.5, 1/2" - 4", class 150 - class 2,500 | Flange EN 1092-1, DN 10 - DN 100, PN 63 - PN 400 Flange DIN, DN 10 - DN 100, PN 64 - PN 400 Flange ANSI B 16.5, 1/2" - 4", class 600 - class 2,500 |
| Centre-to-centre distance | Min. 150 mm to max. 6,000 mm (larger distances on request) | | |
| Nominal pressure | Max. 64 bar | Max. 160 bar | Max. 250 bar |
| Temperature range | -196 ... +450 °C | | |
| Float | Cylindrical float, model BFT-H or corrugated float, model BFT-S (titanium 3.7035 and stainless steel 1.4547), see data sheet LM 10.02 | | |
| Magnetic display | Standard version, model BMD-S: < 200 °C High-temperature version, model BMD-F: > 200 °C, see data sheet LM 10.03 | | |
| Level sensor | Reed sensor, model BLR, see data sheet LM 10.04 Magnetostrictive sensor, model BLM, see data sheet LM 10.05 | | |
| Magnetic switches | Magnetic switch, model BGU, see data sheet LM 10.06 | | |
| Approvals | Ex c, GL, DNV, GOST-R | Ex c, GL, DNV, GOST-R | Ex c, GOST-R |

1) Other materials on request

Special versions on request

Bypass level indicator, special materials, model BNA-X

Bypass chamber from stainless steel with internal coating E-CTFE, ETFE or PTFE



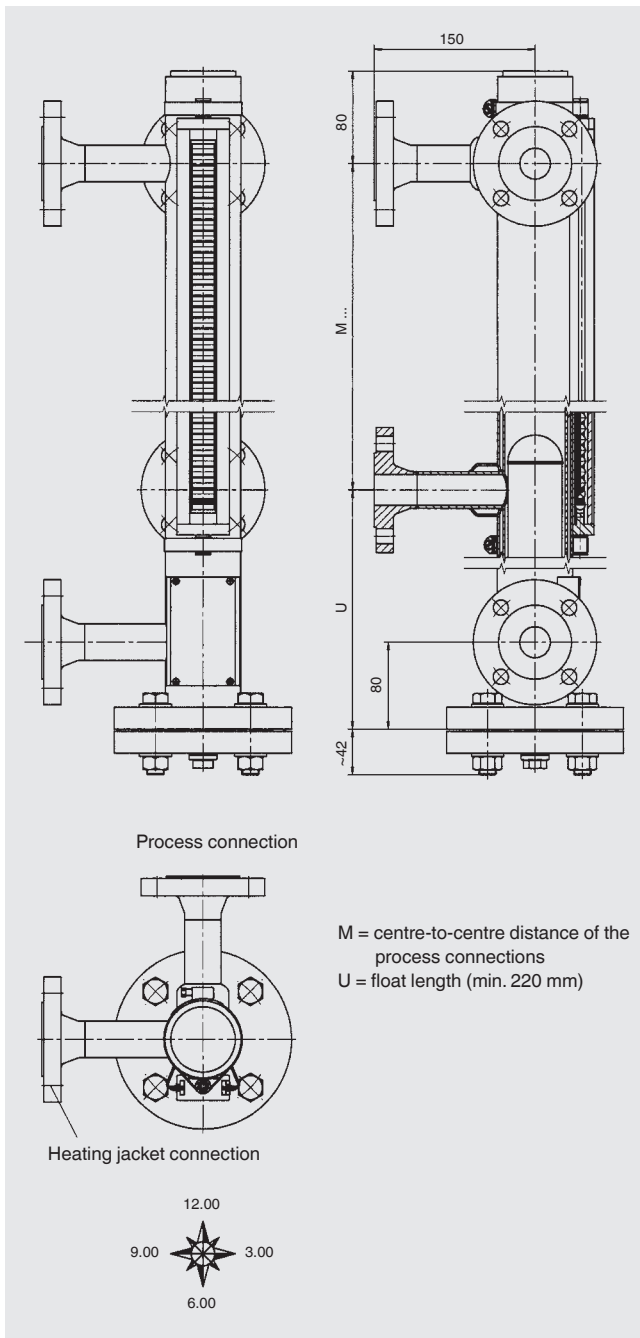
Specifications

| | | | |
|---------------------------|---|-----------------------------|-----------------------------|
| Material | Stainless steel 1.4571 with internal coating | | |
| | E-CTFE | ETFE | PTFE |
| Bypass chamber | Ø 64 x 2 mm, max. 16 bar | Ø 70 x 2 mm, max. 16 bar | Ø 70 x 2 mm, max. 10 bar |
| Chamber end top | Flange connection Options: (see page 14) ■ Vent flange | | |
| Chamber end bottom | Flange connection Options: (see page 14) ■ Drain flange | | |
| Process connections | 2 x lateral (options see page 15) Flange EN 1092-1, DN 10 - DN 50, PN 6 - PN 16 Flange DIN, DN 10 - DN 50, PN 6 - PN 16 Flange ANSI B 16.5, 1/2" - 4", class 150 - class 300 | | |
| Centre-to-centre distance | Min. 150 mm to max. ... mm (overall pipe length max. 2,500 mm) With overall pipe length > 2,500 mm: Bypass chamber separated by flange connection | | |
| Nominal pressure | Max. 16 bar | Max. 16 bar | Max. 10 bar |
| Temperature range | depending on the medium | | |
| Float | Cylindrical float, model BFT-H, see data sheet LM 10.02 | | |
| Magnetic display | Standard version, model BMD-S, see data sheet LM 10.03 | | |
| Level sensor | Reed sensor, model BLR, see data sheet LM 10.04 Magnetostrictive sensor, model BLM, see data sheet LM 10.05 | | |
| Magnetic switches | Magnetic switch, model BGU, see data sheet LM 10.06 | | |
| Approvals | GOST-R | | |

Special versions on request

Bypass level indicator, heating jacket version, model BNA-J

Bypass chamber and heating jacket pipe from stainless steel



Specifications

| | |
|---------------------------|---|
| Bypass chamber | Ø 60.3 x 2 mm, max. 40 bar Ø 60.3 x 2.77 mm, max. 64 bar |
| Heating jacket pipe | Ø 70 x 2 mm |
| Chamber end top | Flat top Options: (see page 14) ■ Vent screw ■ Vent valve ■ Vent flange |
| Chamber end bottom | Flange connection Options: (see page 14) ■ Drain plug ■ Drain valve ■ Drain flange |
| Process connections | 2 x lateral (options see page 15) Flange EN 1092-1, DN 10 - DN 100, PN 6 - PN 100 Flange DIN, DN 10 - DN 100, PN 6 - PN 100 Flange ANSI B 16.5, 1/2" - 4", class 150 - class 600 Weld stub 1/2" - 1" Threaded bushing G/NPT 1/2" - 1" Threaded nipple G/NPT 1/2" - 1" |
| Heating jacket connection | Flange EN 1092-1, DN 10 - DN 25, PN 6 - PN 40 Flange DIN, DN 10 - DN 25, PN 6 - PN 40 Flange ANSI B 16.5, 1/2" - 4", class 150 - class 300 Threaded bushing G/NPT 1/2" - 1" Threaded nipple G/NPT 1/2" - 1" |
| Centre-to-centre distance | Min. 150 mm to max. 6,000 mm (larger distances on request) |
| Material | Stainless steel 1.4571 with bypass chamber Ø 60.3 x 2 mm (standard version) Stainless steel 1.4404 with bypass chamber Ø 60.3 x 2.77 mm on request |
| Nominal pressure | Max. 64 bar |
| Temperature range | -60 ... +450 °C |
| Float | Cylindrical float, model BFT-H, see data sheet LM 10.02 |
| Magnetic display | Standard version, model BMD-S: < 200 °C High-temperature version, model BMD-F: > 200 °C, see data sheet LM 10.03 |
| Level sensor | Reed sensor, model BLR, see data sheet LM 10.04 Magnetostrictive sensor, model BLM, see data sheet LM 10.05 |
| Magnetic switches | Magnetic switch, model BGU, see data sheet LM 10.06 |
| Approvals | Ex c, GL, GOST-R |

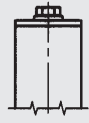
Special versions on request

Option bypass chamber end

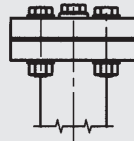
Bypass chamber end top (examples)



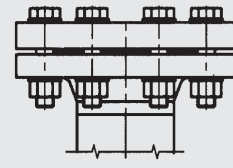
1
Flat top without venting



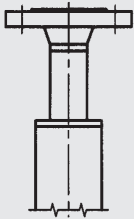
2
Flat top with vent plug G 1/2"



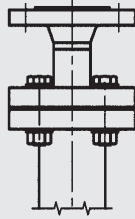
3
Flange connection with vent plug G 1/2"



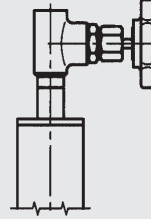
4
Flange connection e.g. sealing faces groove/tongue per DIN 2512



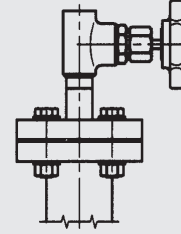
5
Flat top with vent flange



6
Flange connection vent flange



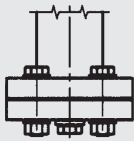
7
Flat top with vent valve



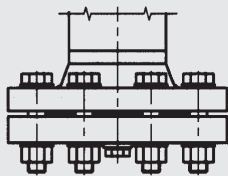
8
Flange connection with vent valve

Other ends on request

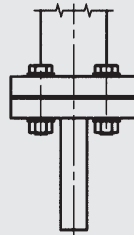
Bypass chamber end bottom (examples)



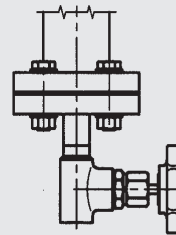
9
Flange connection with drain plug G/NPT 1/2"



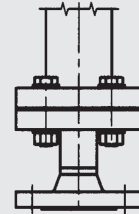
10
Flange connection e.g. sealing faces groove/tongue per DIN 2512 with drain plug G 1/2"



11
Flange connection with drain nozzle



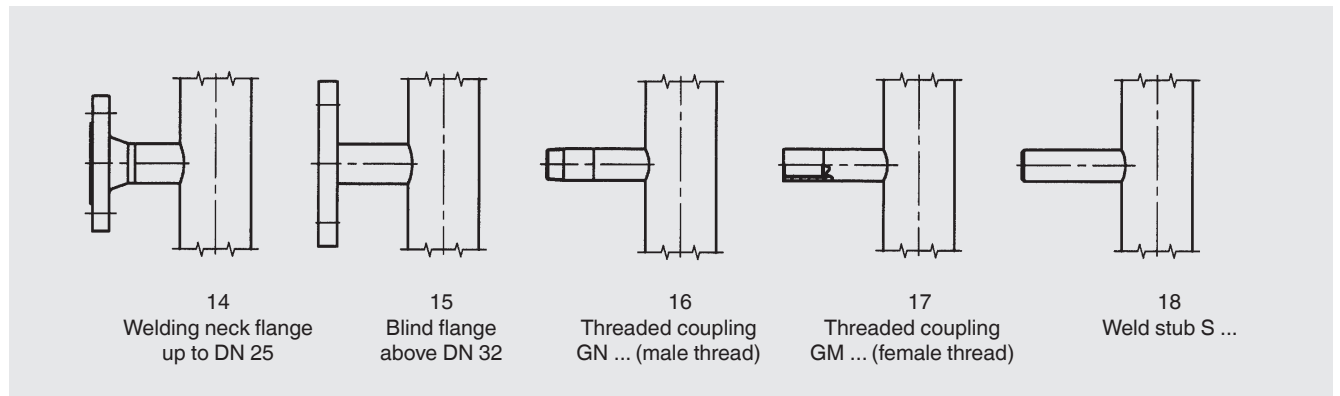
12
Flange connection with drain valve



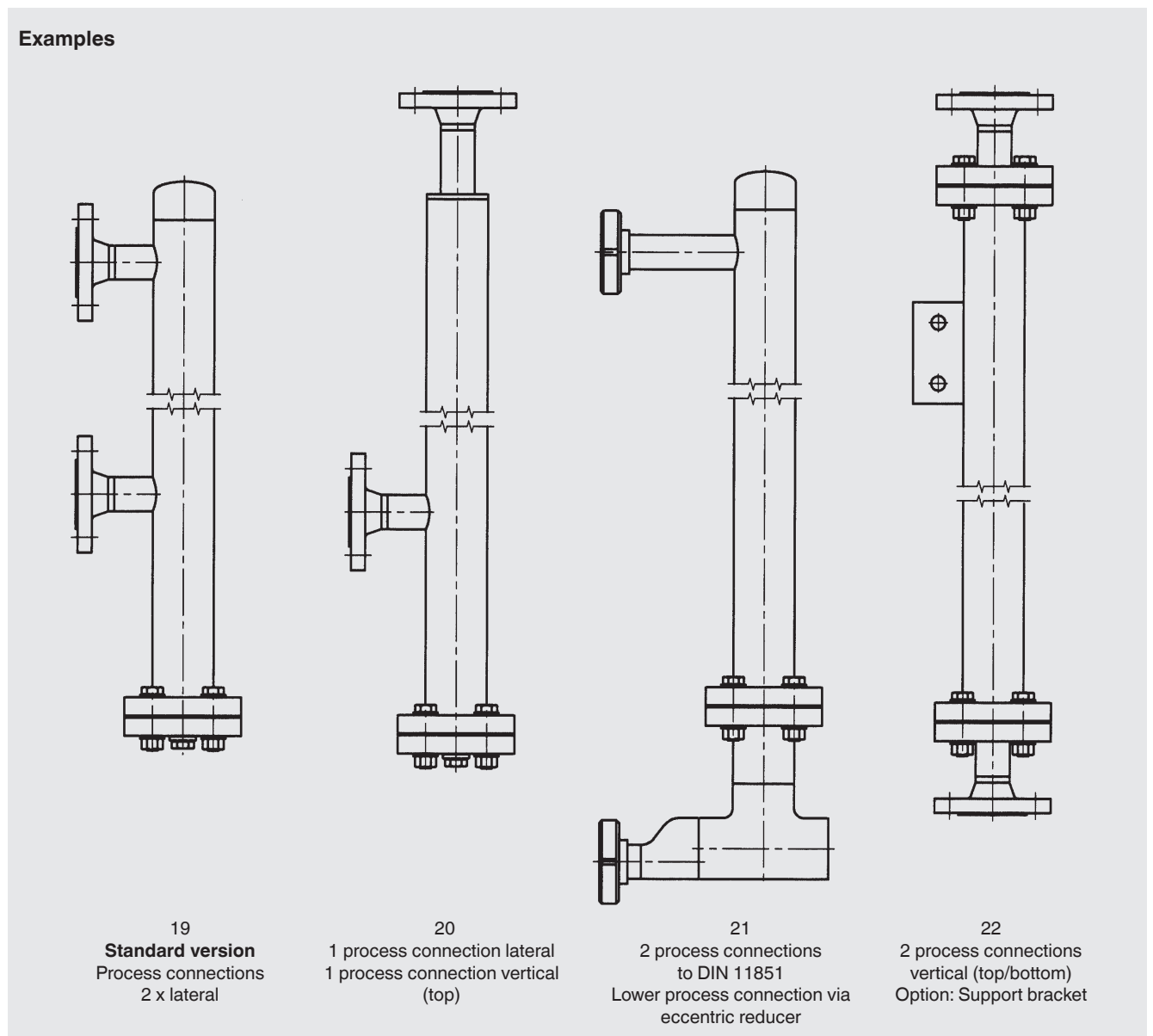
13
Flange connection with drain flange

Other ends on request

Option process connection



Examples



Other connections on request

CE conformity

Pressure equipment directive

97/23/EC, pressure accessory

ATEX directive (option)

94/9/EC, ignition protection type Ex c, zone 0/1, gas

Approvals

- **GL**, ships, shipbuilding, offshore, Germany
- **DNV**, ships, shipbuilding, offshore, Norway
- **ABS**, ships, shipbuilding, offshore, USA
- **GOST**, national standard for Russia, Kazakhstan and Belarus

Approvals and certificates, see website

Ordering information

Model / Approval / Material / Process specifications (operating temperature and pressure, density) / Process connection / Centre-to-centre distance M ...

Detailed information on floats, magnetic displays, sensors (reed chains and magnetostrictive) and magnetic switches can be found in the following data sheets:

- Float, model BFT; see data sheet LM 10.02
- Magnetic display; model BMD; see data sheet LM 10.03
- Reed sensor; model BLR; see data sheet LM 10.04
- Magnetostrictive sensor; model BLM; see data sheet LM 10.05
- Guided wave radar, model GTR, see data sheet LM 20.05
- Magnetic switch; model BGU; see data sheet LM 10.06

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