

Bypass level indicator With magnetic display Model BNA

KSR data sheet BNA



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: $T = -160 \dots +450 \text{ }^\circ\text{C}$
 - Operating pressure: $P = \text{vacuum to } 420 \text{ bar}$
 - Limit density: $\rho \geq 400 \text{ kg/m}^3$
- Wide variety of different process connections and materials
- Mounting of level sensors and magnetic switches possible as an option
- Explosion-protected versions

Description

The WIKA model BNA bypass level indicator 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

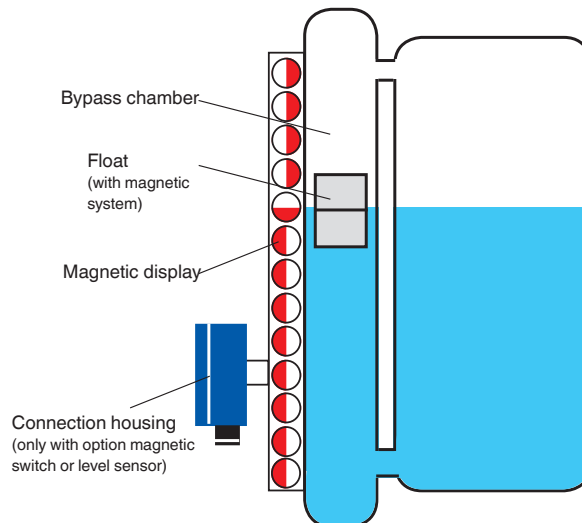
Through the magnetic field of the permanent magnetic system in the float, the display elements, through the wall of the bypass chamber, are turned through 180° . For an increasing level from white to red; for a falling level from red to white.

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, pressure, vacuum, temperature, vapours, condensation, 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

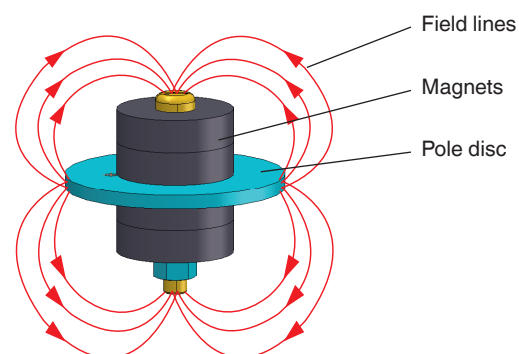


Design and operating principle

- 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	Max. 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	-269 ... +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	-200 ... +450
High-pressure version, model BNA-H	x	x	x	x	x	x		Stainless steel 1.4571 (316Ti), 1.4404 (316L)	400	-200 ... +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	-200 ... +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	-200 ... +450
Liquid gas/KOPlus version, model BNA-L	x							Stainless steel 1.4571 (316Ti), 1.4404 (316L)	25	-60 ... +300
Special version, model BNA-X	x							Stainless steel 6Mo 1.4547 (UNS S31254)	250	-200 ... +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	-200 ... +450
	x	x	x	x	x	x		Hastelloy C276 (2.4819)	160	-200 ... +450
Heating jacket version, model BNA-J	x	x	x		x			Stainless steel 1.4571 (316Ti), 1.4404 (316L)	40	-60 ... +450

Ex approvals

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

Type approval

Explosion protection	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

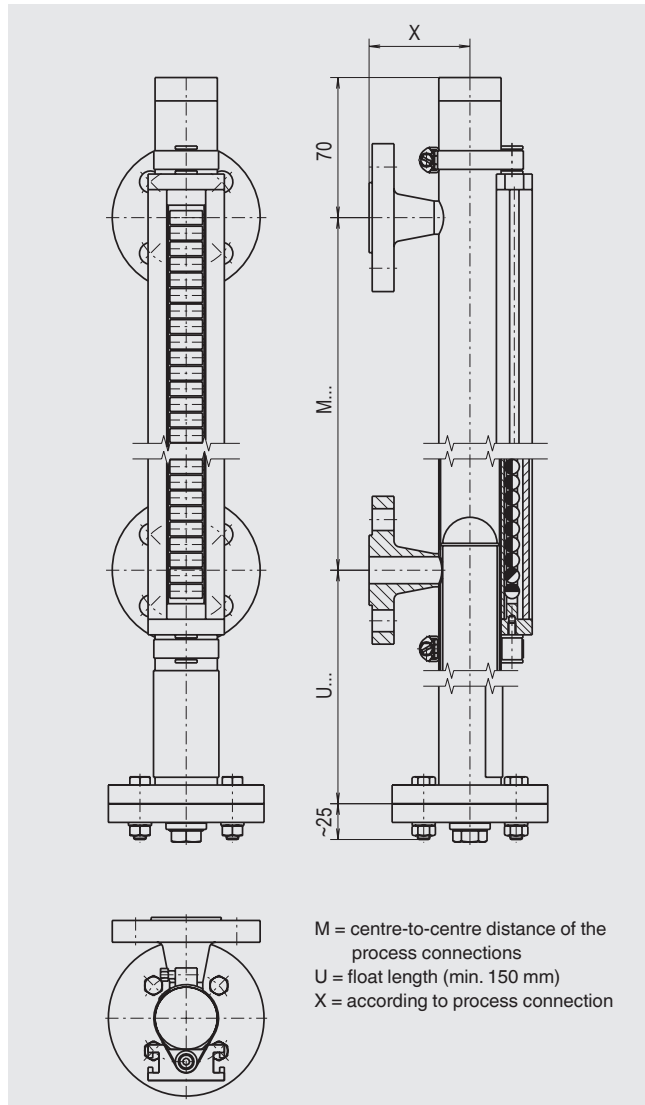
Detailed information on floats, magnetic displays, sensors (reed chains and magnetostrictive) and magnetic switches can be found in the following data sheets:

- Float; data sheet model BFT
- Magnetic display; data sheet model BMD
- Reed sensor; data sheet model BLR
- Magnetostrictive sensor; data sheet model BLM
- Magnetic switch; data sheet model BGU

Bypass level indicator, compact version, model BNA-C

Bypass chamber from stainless steel

Option: Explosion-protected version



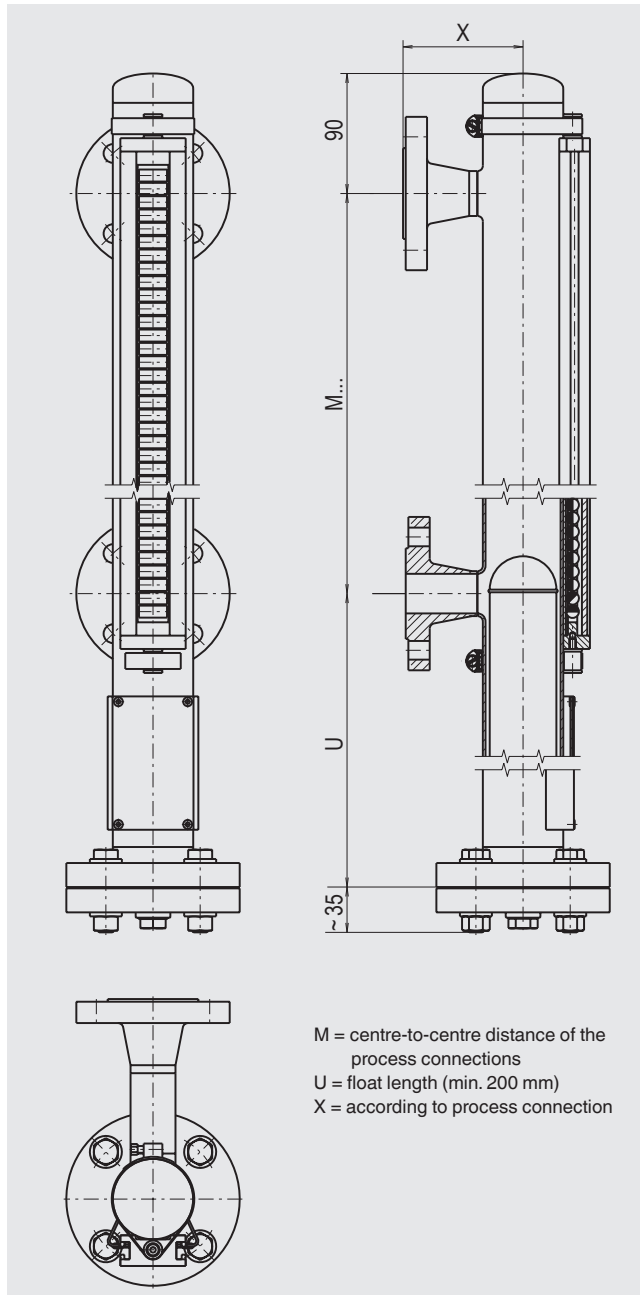
Specifications	
Bypass chamber	Ø 42.2 x 2 mm, max. 40 bar
Chamber end top	Flat top, flange or threaded connection Options: (see page 14) <ul style="list-style-type: none"> ■ Vent screw ■ Vent valve ■ Vent flange
Chamber end bottom	Flange connection or threaded connection Options: (see page 14) <ul style="list-style-type: none"> ■ 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 1092-1, 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	-269 ... +150 °C
Float	Cylindrical float, model BFT-H32, see data sheet model BFT
Magnetic display	Magnetic display; model BMD-S; see data sheet model BMD
Level sensor	Reed sensor, data sheet model BLR Magnetostrictive sensor, data sheet model BLM
Magnetic switches	Magnetic switch, data sheet model BGU
Approvals	Ex c, GL, DNV

Special versions on request

Bypass level indicator, standard version, model BNA-S

Bypass chamber from stainless steel

Option: Explosion-protected version



M = centre-to-centre distance of the process connections
 U = float length (min. 200 mm)
 X = according to process connection

Specifications

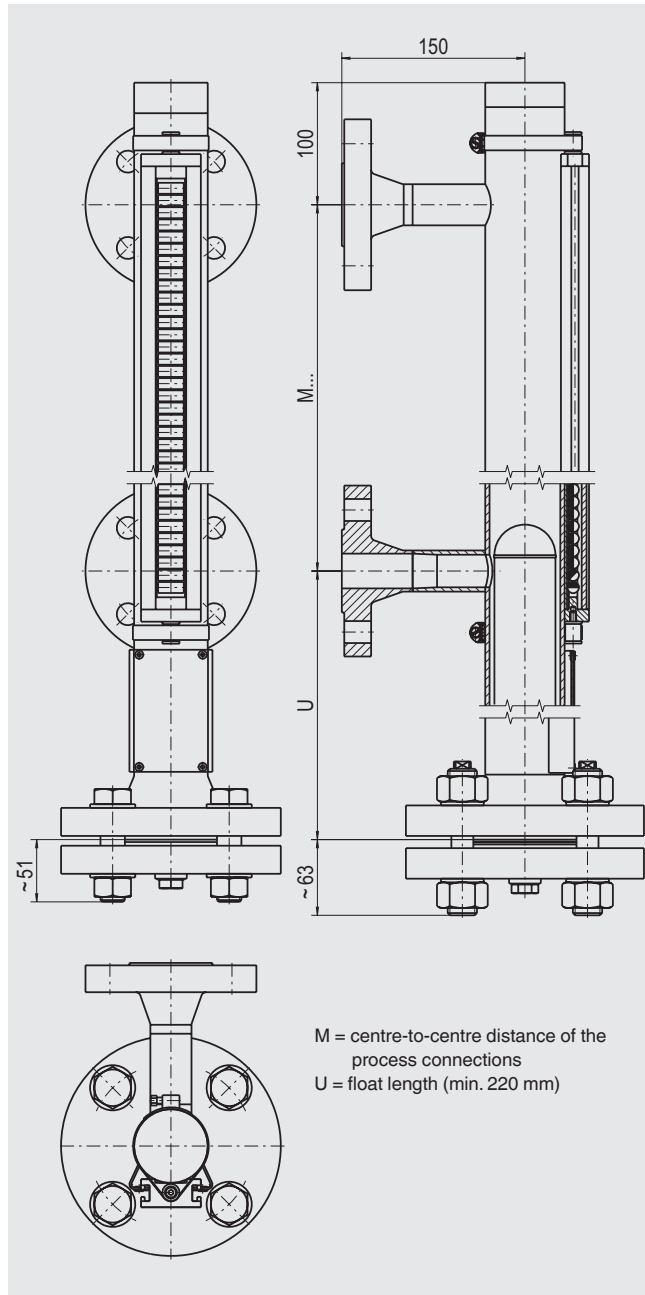
Bypass chamber	Ø 60.3 x 2 mm, max. 40 bar Ø 60.3 x 2.77 mm, max. 64 bar
Chamber end top	Flat top or flange connection Options: (see page 14) ■ Vent screw ■ Vent valve ■ Vent flange
Chamber end bottom	Flange connection Options: (see page 14) ■ Drain plug ■ Drain valve ■ Drain flange
Process connections	2 x lateral (options see page 15) Flange EN 1092-1, DN 10 - DN 100, PN 6 - PN 63 Flange DIN 1092-1, 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	-200 ... +450 °C
Float	Cylindrical float, model BFT-H or corrugated float, model BFT-S, see data sheet model BFT
Magnetic display	Standard version, model BMD-S: < 200 °C High-temperature version, model BMD-F: > 200 °C, see data sheet model BMD
Level sensor	Reed sensor, data sheet model BLR Magnetostrictive sensor, data sheet model BLM
Magnetic switches	Magnetic switch, data sheet model BGU
Approvals	Ex c, GL, DNV, ABS

Special versions on request

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

Bypass chamber from stainless steel

Option: Explosion-protected version



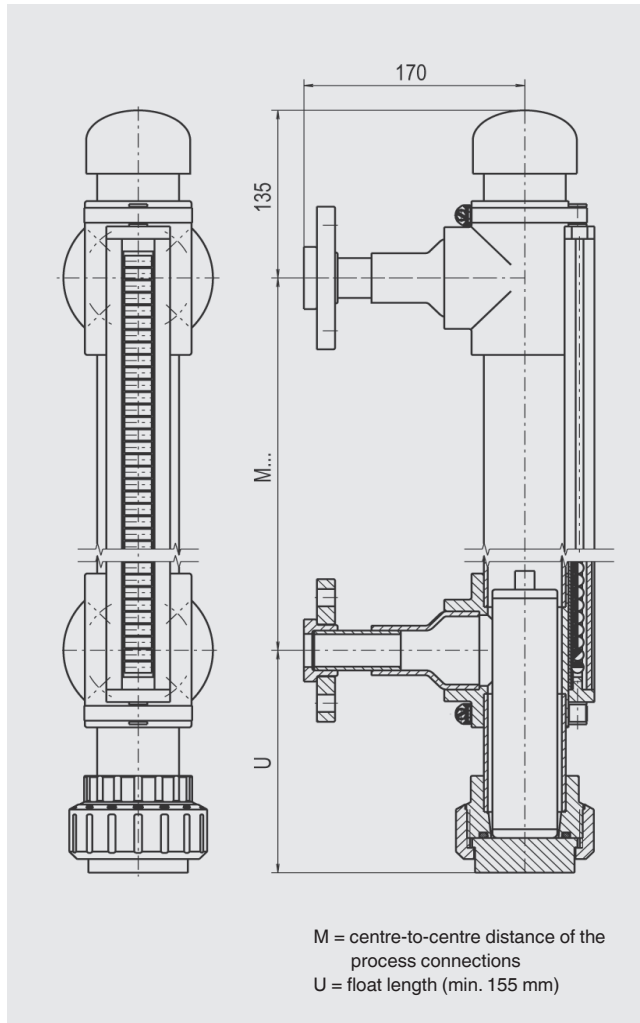
Specifications

Bypass chamber	<ul style="list-style-type: none"> Ø 60.3 x 3.91 mm, max. 160 bar Ø 60.3 x 5.54 mm, max. 250 bar Ø 73 x 7.01 mm, max. 250 bar Ø 76.1 x 10 mm, max. 400 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 63 - PN 400 Flange DIN 1092-1, 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"
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 (Ø 60.3 x 3.91 mm, Ø 76.1 x 10 mm) Stainless steel 1.4404 (Ø 60.3 x 3.91 mm, Ø 60.3 x 5.54 mm, Ø 73 x 7.01 mm)
Nominal pressure	Max. 400 bar
Temperature range	-200 ... +450 °C
Float	Cylindrical float, model BFT-H, ball-segment float, model BFT-K or foam float, model BFT-F, see data sheet model BFT
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 model BMD
Level sensor	<ul style="list-style-type: none"> Reed sensor, data sheet model BLR Magnetostrictive sensor, data sheet model BLM
Magnetic switches	Magnetic switch, data sheet model BGU
Approvals	Ex c, GL, DNV

Special versions on request

Bypass level indicator, plastic version, model BNA-P

Bypass chamber and float from PVDF or PP



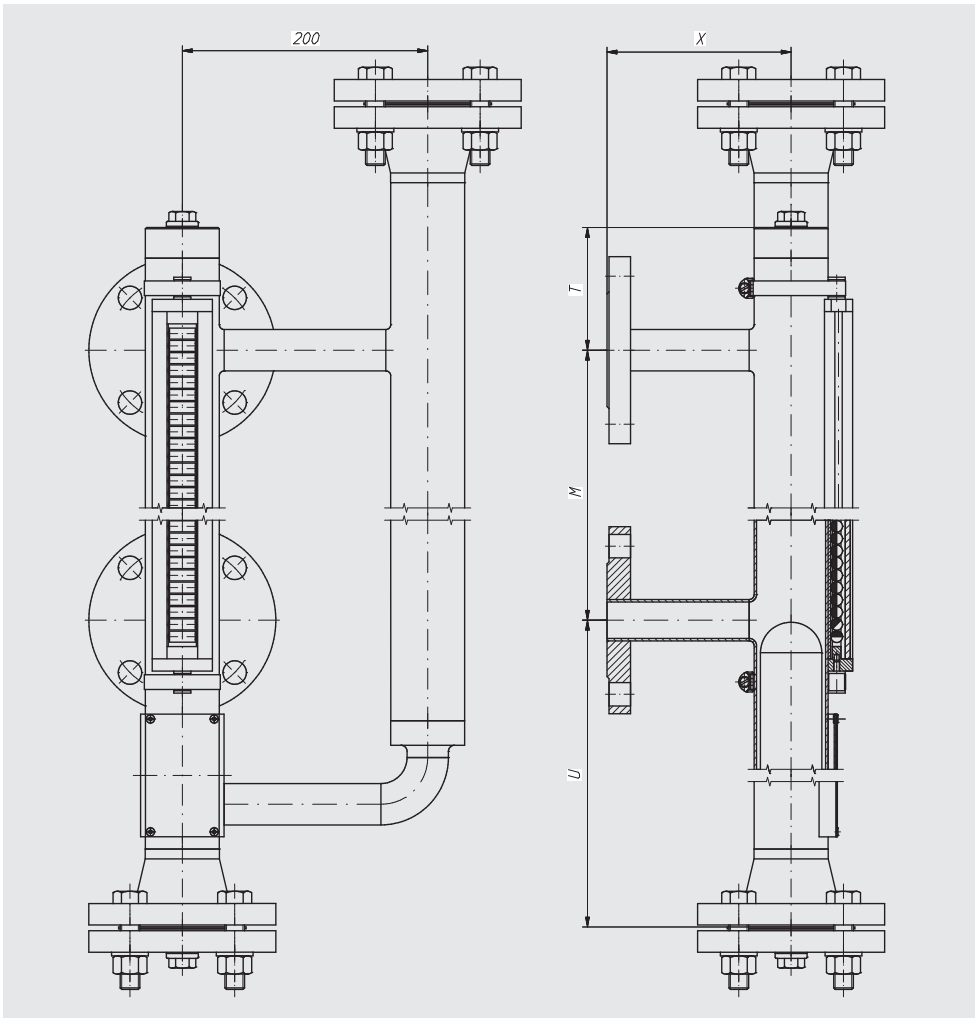
Specifications

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 1092-1, 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 model BFT
Magnetic display	Standard version, model BMD-S, see data sheet model BMD
Level sensor	Reed sensor, data sheet model BLR Magnetostrictive sensor, data sheet model BLM
Magnetic switches	Magnetic switch, data sheet model BGU
Approvals	-

Special versions on request

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

Bypass chamber from stainless steel



Specifications

Bypass chamber Ø 60.3 x 2 mm, max. 40 bar
 Chamber end top Ø 60.3 x 2.77 mm, max. 64 bar

Chamber end top
 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 DIN 1092-1, 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"

External sensor connection
 Flange EN 1092-1, DN 50, PN 6 - PN 400
 Flange DIN 1092-1, DN 50, PN 6 - PN 400
 Flange ANSI B 16.5, 2" class 150 - class 2,500
 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. 64 bar

Temperature range -200 ... +450 °C

Float Cylindrical float, model BFT-H or corrugated
 float, model BFT-S, see data sheet model BFT

Magnetic display Standard version, model BMD-S: < 200 °C
 High-temperature version, model BMD-F:
 > 200 °C, see data sheet model BMD

Level sensor Reed sensor, data sheet model BLR
 Magnetostrictive sensor, data sheet model BLM

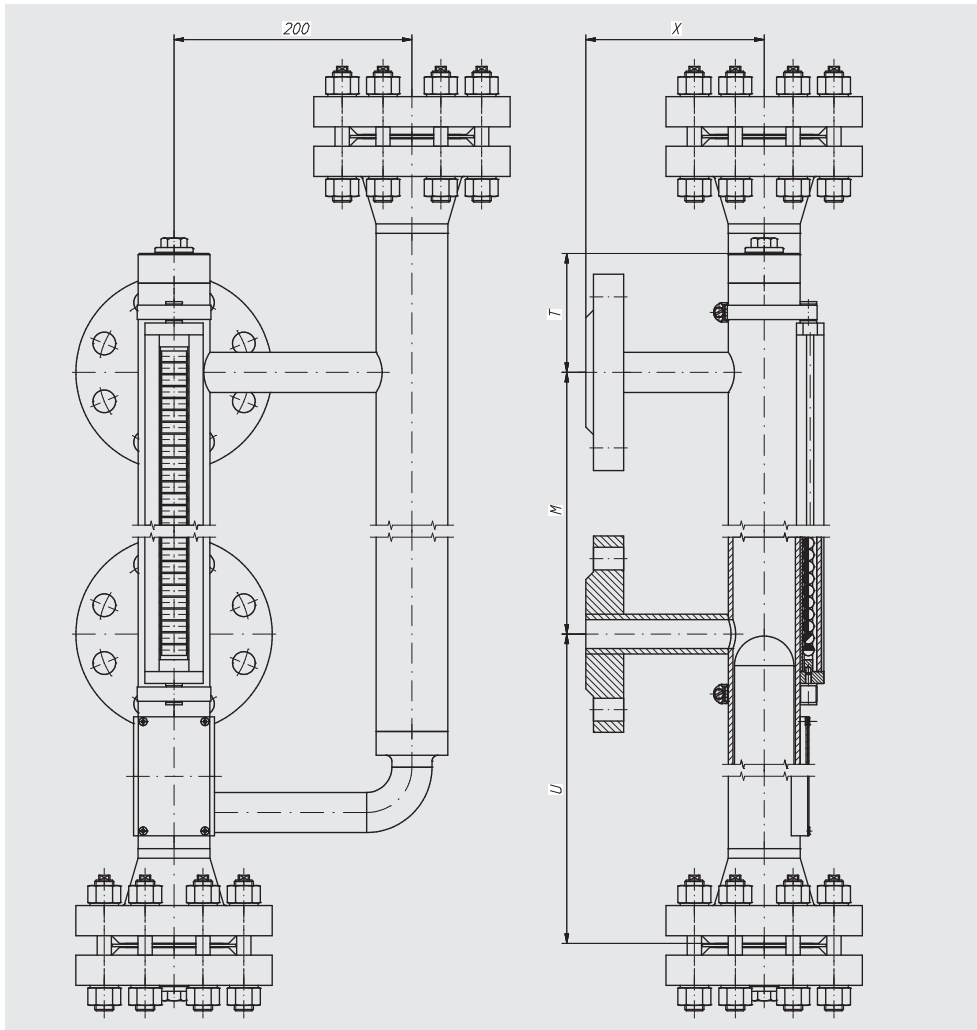
Magnetic switches Magnetic switch, data sheet model BGU

Approvals Ex c

Special versions on request

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

Bypass chamber from stainless steel



Specifications

Bypass chamber \varnothing 60.3 x 3.91 mm, max. 160 bar

Chamber end top

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 DIN 1092-1, 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

Flange EN 1092-1, DN 50, PN 6 - PN 400
Flange DIN 1092-1, DN 50, PN 6 - PN 400
Flange ANSI B 16.5, 2" class 150 - class 2,500
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 -200 ... +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 model BFT

Magnetic display Standard version, model BMD-S: < 200 °C
High-temperature version, model BMD-F:
> 200 °C, see data sheet model BMD

Level sensor Reed sensor, data sheet model BLR
Magnetostrictive sensor, data sheet model BLM

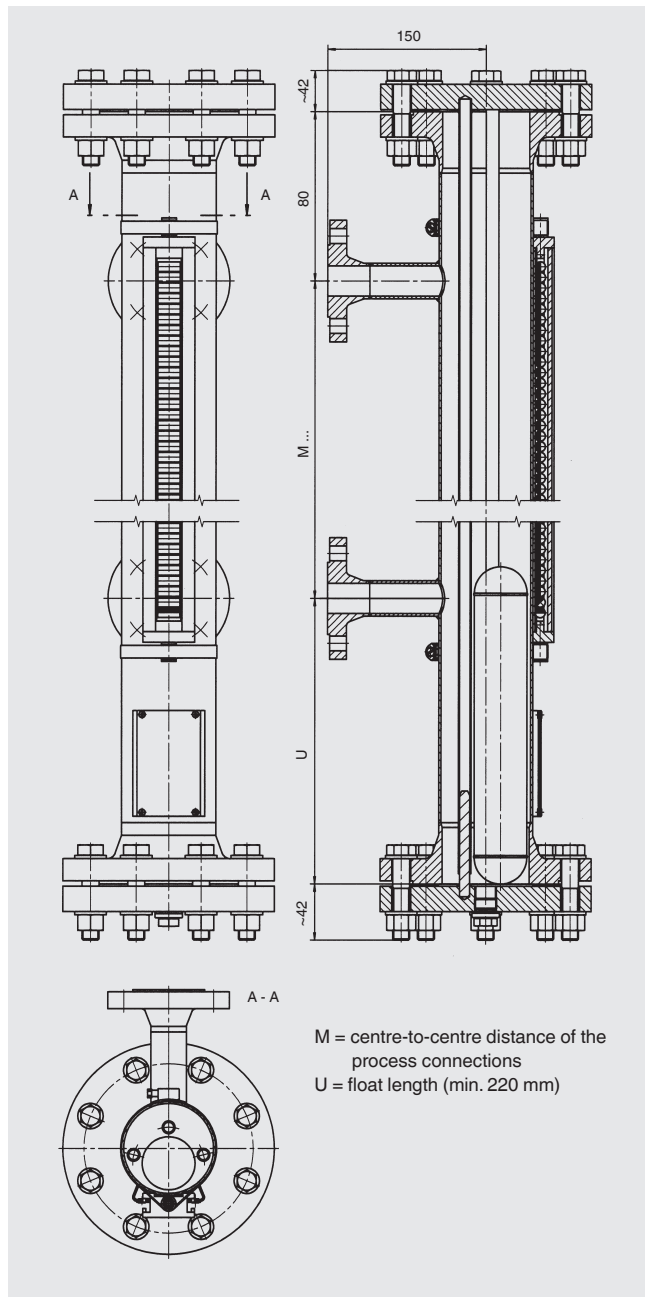
Magnetic switches Magnetic switch, data sheet model BGU

Approvals Ex c

Special versions on request

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

Bypass chamber from stainless steel



Specifications

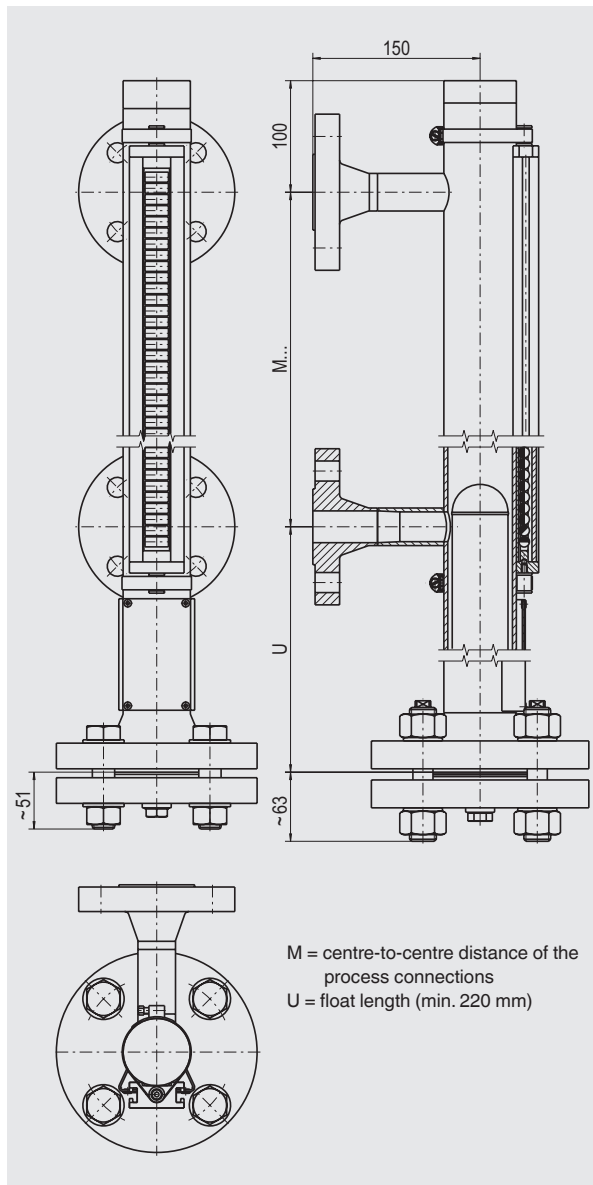
Bypass chamber	Ø 88.9 x 2 mm, max. 25 bar Ø 88.9 x 2.9 mm, max. 40 bar
Chamber end top	Flange connection Options: (see page 14) ■ Vent screw ■ Vent valve ■ Vent flange
Chamber end bottom	Flange connection Options: (see page 14) ■ Drain plug ■ Drain valve ■ Drain flange
Process connections	2 x lateral (options see page 15) Flange EN 1092-1, DN 10 - DN 100, PN 6 - PN 63 Flange DIN 1092-1, 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) (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 model BFT
Magnetic display	Standard version, model BMD-S: < 200 °C High-temperature version, model BMD-F: > 200 °C, see data sheet BMD
Level sensor	Reed sensor, data sheet model BLR Magnetostrictive sensor, data sheet model BLM
Magnetic switches	Magnetic switch, data sheet model BGU
Approvals	-

Special versions on request

Bypass level indicator, special version, model BNA-X

Bypass chamber from special materials

Option: Explosion-protected version



Specifications

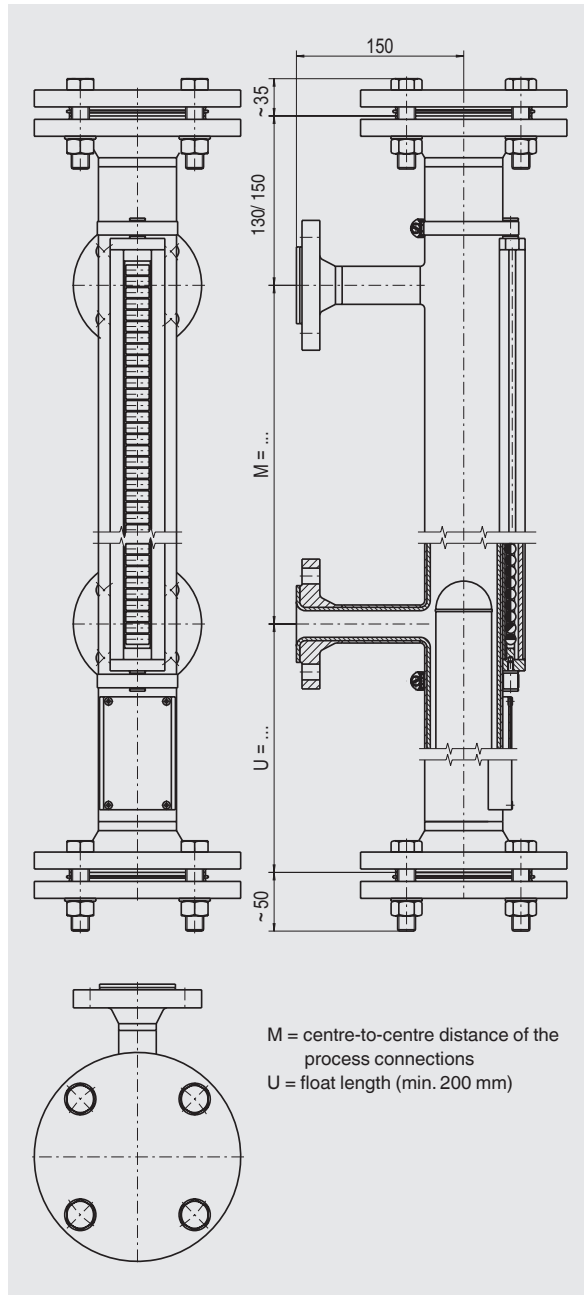
Material ¹⁾	Titanium 3.7035	Hastelloy C276	Stainless steel 6Mo 1.4547 (UNS S31254)
Bypass chamber	Ø 60.3 x 2 mm, max. 40 bar Ø 60.3 x 2.77 mm, max. 64 bar	Ø 60.3 x 2.77 mm, max. 64 bar Ø 60.3 x 3.91 mm, max. 160 bar	Ø 60.3 x 2.77 mm, max. 64 bar Ø 60.3 x 3.91 mm, max. 160 bar Ø 60.3 x 5.54 mm, max. 250 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 1092-1, 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 1092-1, 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 1092-1, 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	-200 ... +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 model BFT		
Magnetic display	Standard version, model BMD-S: < 200 °C High-temperature version, model BMD-F: > 200 °C, see data sheet model BMD		
Level sensor	Reed sensor, data sheet model BLR Magnetostrictive sensor, data sheet model BLM		
Magnetic switches	Magnetic switch, data sheet model BGU		
Approvals	Ex c, GL, DNV	Ex c, GL, DNV	-

1) Other materials on request

Special versions on request

Bypass level indicator, special version, model BNA-X

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



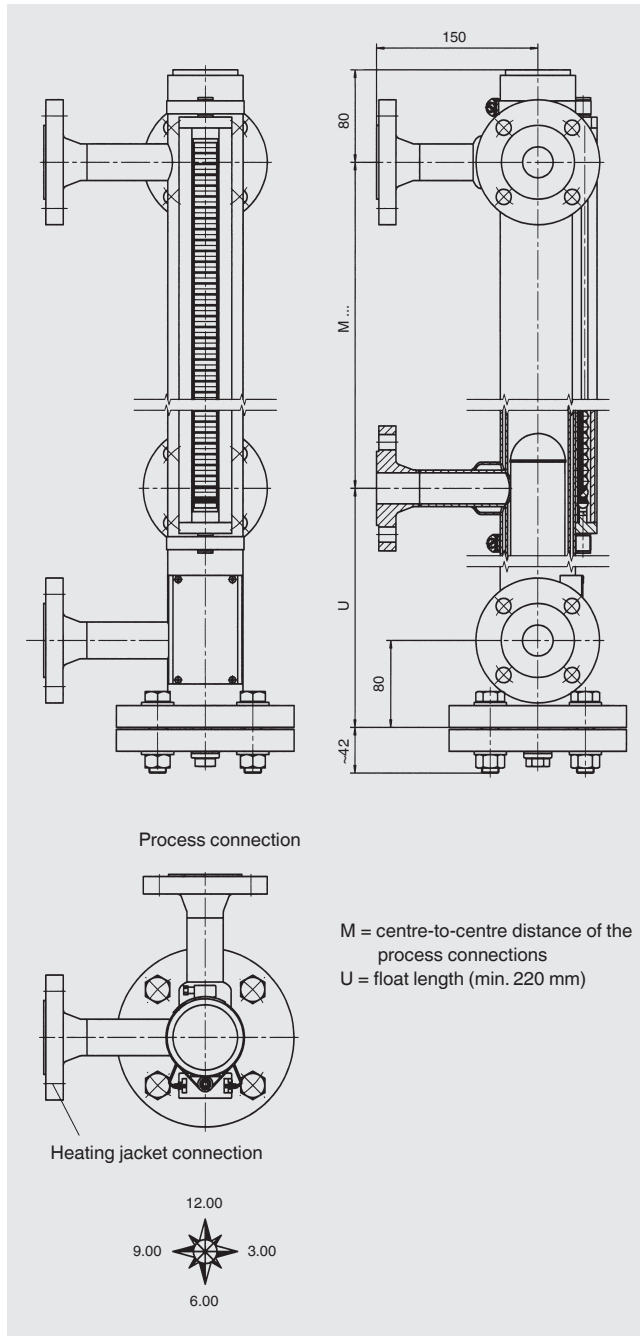
Specifications

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 1092-1, 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 model BFT		
Magnetic display	Standard version, model BMD-S, see data sheet model BMD		
Level sensor	Reed sensor, data sheet model BLR Magnetostrictive sensor, data sheet model BLM		
Magnetic switches	Magnetic switch, data sheet model BGU		
Approvals	-		

Special versions on request

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

Bypass chamber and heating jacket pipe from stainless steel
Option: Explosion-protected version



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 1092-1, 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 1092-1, 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 model BFT
Magnetic display	Standard version, model BMD-S: < 200 °C High-temperature version, model BMD-F: > 200 °C, see data sheet model BMD
Level sensor	Reed sensor, data sheet model BLR Magnetostrictive sensor, data sheet model BLM
Magnetic switches	Magnetic switch, data sheet model BGU
Approvals	Ex c, GL

Special versions on request

Option bypass chamber end

Bypass chamber end top (examples)



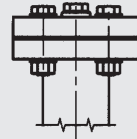
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Flat top without venting



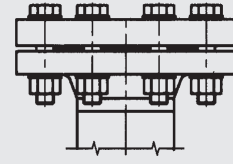
2

Flat top with vent plug G 1/2"



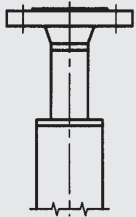
3

Flange connection with vent plug G 1/2"



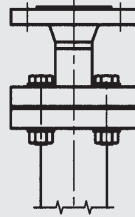
4

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



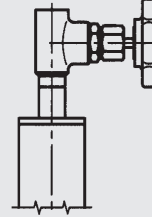
5

Flat top with vent flange



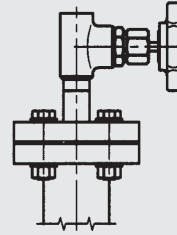
6

Flange connection vent flange



7

Flat top with vent valve

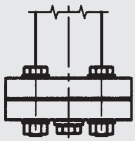


8

Flange connection with vent valve

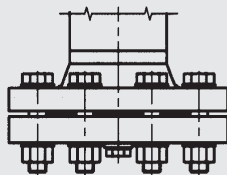
Other ends on request

Bypass chamber end bottom (examples)



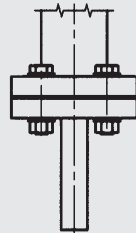
9

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



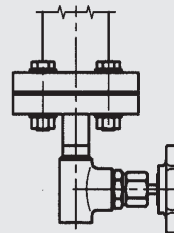
10

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



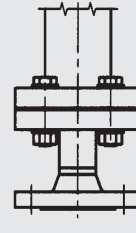
11

Flange connection with drain nozzle



12

Flange connection with drain valve

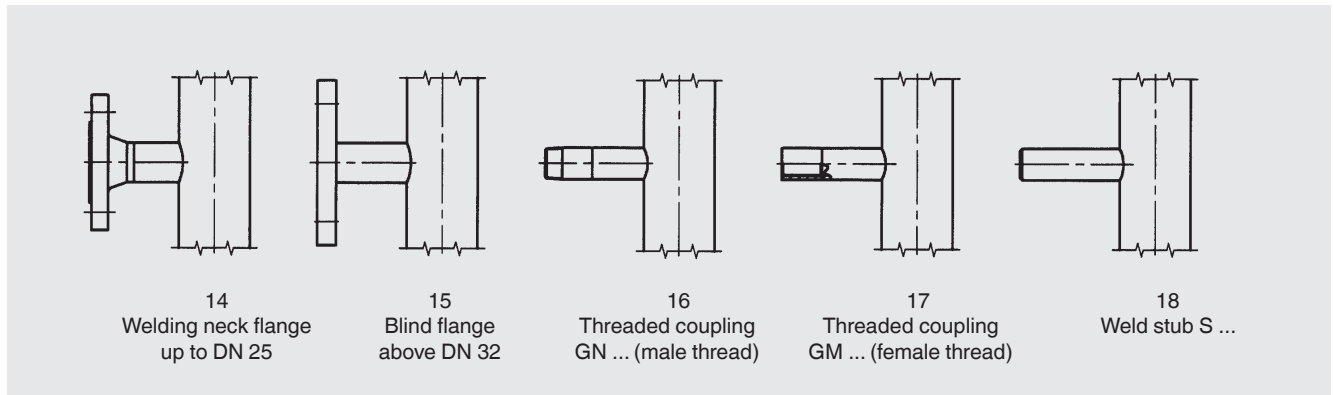


13

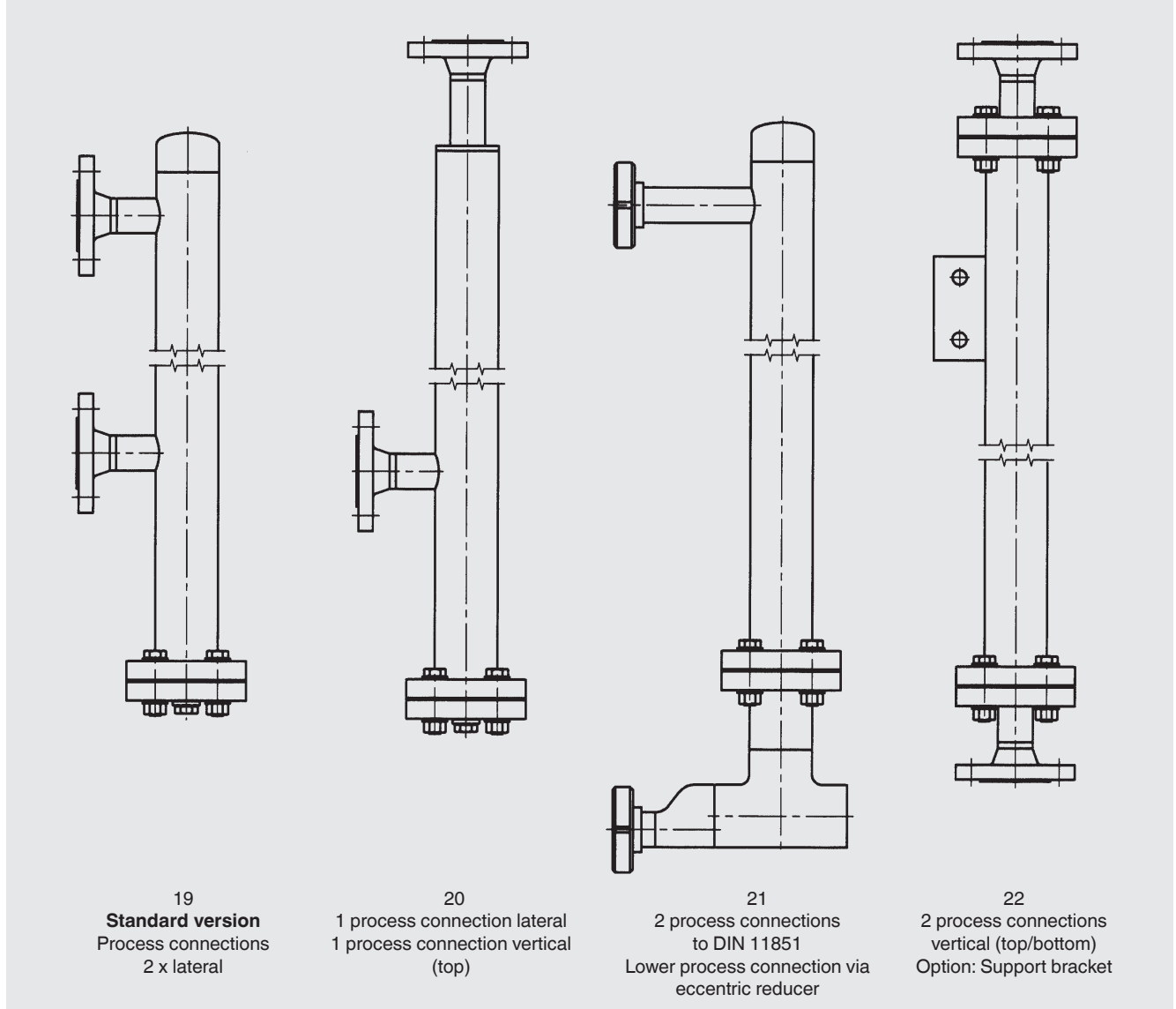
Flange connection with drain flange

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 (e.g. offshore), Germany
- **DNV**, ships, shipbuilding (e.g. offshore), Norway
- **ABS**, ships, shipbuilding (e.g. offshore), USA

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, see data sheet model BFT
- Magnetic display; see data sheet model BMD
- Reed sensor; see data sheet model BLR
- Magnetostrictive sensor; see data sheet model BLM
- Magnetic switch; see data sheet model BGU

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Appendix

Type Code

Code								
1	Basic type							
	BNA	Magnetic Level Indicator						
2	Process connections							
		1st Key Nom. size		2nd Key Nom. pressure		3rd Key Flange face		
.../.../...	EN...	EN 1092 DN 10 - DN 100	...	PN6 - PN400	...	Form B1, B2, C, D		
	...	DIN DN 10 - DN 100		PN6 - PN400		Form, C, N, F		
	...	ANSI 1/2" - 4"		Class 150 - Class 400		Form RF, SF, FF, RTJ		
	JIS...	JIS DN 10 - DN 100		5 K - 63 K		Form RF, SF, FF, RTJ		
	GN...	Thread male DIN						
	GM...	Thread female DIN						
	NPTN...	Thread male NPT						
	NPTM...	Thread female NPT						
	S...	Welding stubs						
3	Option: Level Sensor							
...	MG	Basic type without optional code						
4	Distance centre-to-centre							
...	M...	Distance between flange centres in mm						
5	Material and chamber dimensions							
		1st Key Material				2nd Key Chamber dimensions		
.../...x...	V	Stainless steel 1.4571	HC	Hastelloy C	...	Chamber OD x Wall thickness in mm		
	L	Stainless steel 1.4404	MO	SS 1.4529 (6Mo)				
	VE	Stainless steel electro-polished	M	Monel				
	VTF	Stainless steel PTFE-lined	PP	Polypropylene				
	VET	Stainless steel E-TFE-coated	PF	PVDF				
	VEC	Stainless steel E-CTFE-coated						
6	Magnetic Roller Display							
		1st Key Design				2nd Key = Scale		
.../...	MRA	Aluminium case with plastic rollers			SK.	with scale (plastic), graduation in cm (printed)		
	MRK	Aluminium case with ceramic rollers			SA.	Aluminium scale graved		
	MNAV	Stainless steel case with plastic rollers			SV.	Stainless steel graved		
	MNKV	Stainless steel with ceramic rollers			P.	with sight glass extender (for insulations)		
	MRAV	Stainless steel case with T-slot and plastic rollers						
	MRFV	Stainless steel case with T-slot and stainless steel flaps						
7	Option Magnetic Switches 1st Key = Quantity							
		2nd Key Design			3rd Key Cable length		4th Key Options	
.../.../.../...	M.	BGU	MVE.	BGU-V-E	1	1 m	R22	Pre resistance R22 for SPS
	ME.	BGU-E	MVD.	BGU-V-Exd	2	2 m	N	NAMUR circuit
	MS12	BGU-M12	MHT	BGU-AHT	3	3 m		according DIN EN 60947-5-6
	MES12	BGU-E-M12	MVHT	BGU-VHT		
	MA	BGU-A	MIL/H	BGU-AIL/H				
	MEA	BGU-A-E	MAR	BGU-AR				
	MD.	BGU-Exd	MAD	BGU-AD				
	MV.	BGU-V	MAM	BGU-AM				
8	Float (cylindrical) 2nd Key = Diameter/Length in mm							
		1st Key Material			3rd Key Pressure class		4th Key Magnetic system	
Z...S..	.V...	Stainless steel 1.4571	.G...	Borosilicate glass	PN16	PN16	R48H	R48H
	.T...	Titanium 3.7035	.VEC...	Stainless steel 1.4571	PN25	PN25	K92	K92
	.HC...	Hastelloy C		E-CTFE-coated	K74	K74
	.CF...	CF340	.TEC...	Titanium 3.7035			A90	A90
	.PP...	Polypropylene		E-CTFE-coated			A110	A110
	.PF...	PVDF					A125	A125
9	Approvals							
...	Ex	Ex-Design						

Ordering example

	Basic type	Connec- tion size	Option level sensor	Distance centre- tocentre	Material Chamber dimensi- ons	Magnetic Roller display	Option Magnetic switch	Float design	Certifi- cates
Code	1	2	3	4	5	6	7	8	9
	BNA	EN25/16/B1	MG	M1500	V60x2	MRA / SK	3 / M / 2	ZVSS185...	

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