Bypass level indicator
With magnetic display
Model BNA

for further approvals
see page 4

Applications

- Continuous level indication without supply voltage
- Indication of the level proportional to height
- Individual design and corrosion-resistant materials make the products suitable for a broad range of applications
- Chemical industry, 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 and beverage industry, pharmaceutical industry

Special features

- Process- and procedure-specific production
- Operating limits:
  - Operating temperature: T = -196 ... +450 °C
  - Operating pressure: P = Vacuum to 400 bar
  - Limit density: ρ ≥ 340 kg/m³
- Wide variety of different process connections and materials
- Mounting of level transmitters and magnetic switches possible as an option
- Explosion-protected versions

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

Description

The model BNA bypass level indicator consists of a bypass chamber which is attached to the side of a tank as a communicating vessel via at least 2 process connections (flange, threaded coupling or weld stub). 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.

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 supply voltage.

Data sheets showing similar products and accessories:
Float; model BFT; see data sheet LM 10.02
Magnetic display; model BMD; see data sheet LM 10.03
Reed level transmitter; model BLR; see data sheet LM 10.04
Magnetostrictive level transmitter; model BLM; see data sheet LM 10.05
Magnetic switch; model BGU; see data sheet LM 10.06

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
- Detecting and indicating of the fill level of aggressive, combustible, toxic, hot and highly contaminated media
- The functioning of the magnetic display is guaranteed even in the event of power failures
- Applicable for all industrial applications by using various corrosion-resistant materials
- Continuous detection of levels, independent of physical and chemical changes of the media such as: Foaming, conductivity, dielectric, pressure, vacuum, temperature, vapours, condensation, bubble formation, boiling effects
- Interface-layer level measurement from Δ density 100 kg/m³
- Special versions: Food-compliant, coatings, liquid gas, heating jacket

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 °C.

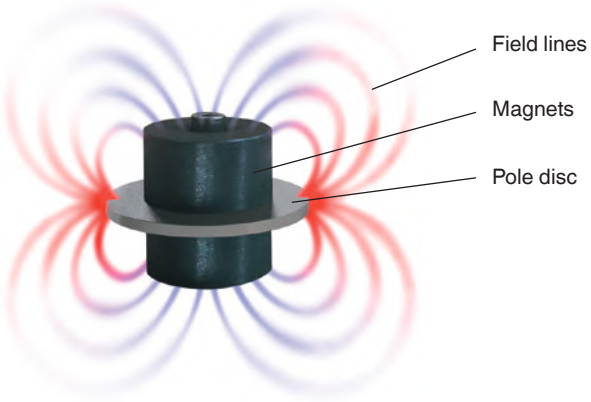
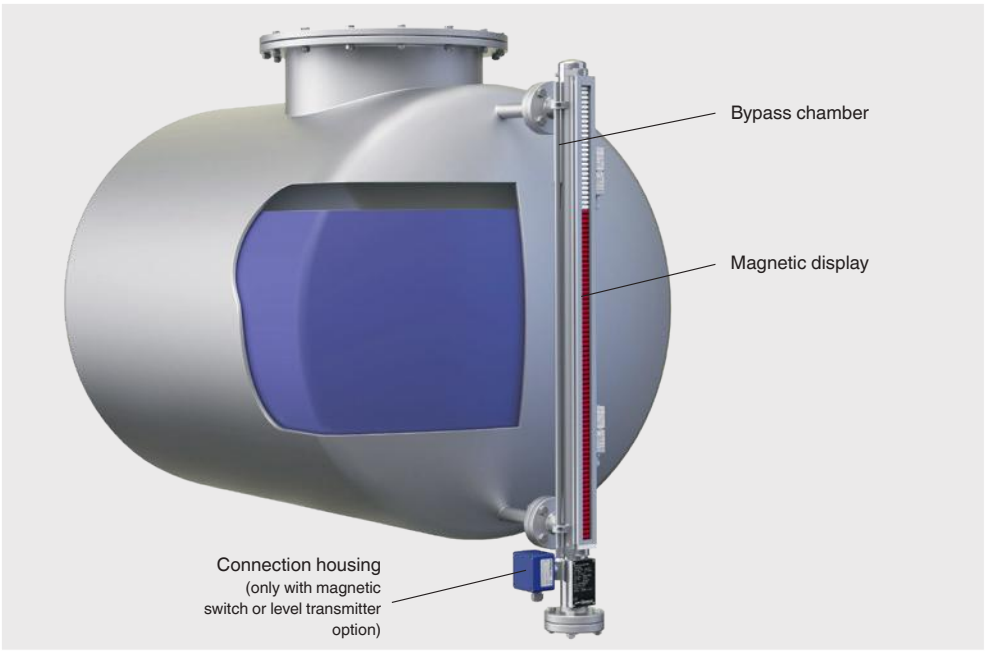


Illustration of the principle



Model overview

Model	Description	Materials	Max. operating pressure in bar	Max. operating temperature in °C
BNA-S	Standard version	■ Stainless steel 1.4571 (316Ti) ■ Stainless steel 1.4401/1.4404 (316/316L)	100	-196 ... +450
BNA-C	Compact version	Stainless steel 1.4571 (316Ti)	40	-196 ... +200
BNA-P	Plastic version	■ PP ■ PVDF	6	-10 ... +100
BNA-H	High-pressure version	■ Stainless steel 1.4571 (316Ti) ■ Stainless steel 1.4401/1.4404 (316/316L)	385	-196 ... +450
BNA-SD	DUPlus version, standard	■ Stainless steel 1.4571 (316Ti) ■ Stainless steel 1.4401/1.4404 (316/316L)	100	-196 ... +450
BNA-HD	DUPlus version, high pressure	■ Stainless steel 1.4571 (316Ti) ■ Stainless steel 1.4401/1.4404 (316/316L)	160	-196 ... +450
BNA-L	Liquid gas/KOPlus version	■ Stainless steel 1.4571 (316Ti) ■ Stainless steel 1.4401/1.4404 (316/316L)	63	-196 ... +450
BNA-X	Special materials	Stainless steel 6Mo 1.4547 (UNS S31254)	250	-196 ... +450
		■ Stainless steel 1.4571 (316Ti) with internal coating E-CTFE ■ Stainless steel 1.4571 (316Ti) with internal coating PTFE	16	Depending on medium
		Titanium 3.7035	40	-10 ... +450
		Hastelloy C276 (2.4819)	160	-196 ... +450
BNA-J	Heating jacket version	■ Stainless steel 1.4571 (316Ti) ■ Stainless steel 1.4401/1.4404 (316/316L)	64	-60 ... +450

Other materials on request

Note: Always consider the operating pressure and temperature together.

Design codes available
- AD2000
- ASME B31.3
- EN 13445
- NORSOK

CE classification

Model	PED	ATEX	CE
BNA-.00	-	-	-
BNA-.A1 **BNA-.A2** **BNA.-BD** **BNA-.GE** **BNA-.BC**	x	-	x
BNA-.00C	-	x	x
BNA-.A1C **BNA-.A2C** **BNA.-BDC** **BNA-.GEC** **BNA-.BCC**	x	x	x

Approvals

Model BNA-P

Logo	Description	Country
CE	**EU declaration of conformity** Pressure equipment directive	European Union
	GOST (option) Metrology [1], measurement technology	Russia

Models BNA-S, BNA-C, BNA-H

Logo	Description	Country
CE Ex	**EU declaration of conformity** ■ Pressure equipment directive ■ ATEX directive (option) Hazardous areas - Ex h Zone 0/1, gas [2] II 1/2G Ex h IIB T6 ... T1 Ga/Gb Zone 0/1, gas [2] II 1/2G Ex h IIC T6 ... T1 Ga/Gb Zone 2, gas II 3/3G Ex h IIC T6 ... T1 Gc/Gc Zone 0/1, dust [2] II -/2D Ex h IIIC T68 ... T360°C -/Db Zone 0/1, dust [2] II -/2D Ex h IIIC T68 ... T360°C -/Db Zone 2, dust II -/3D Ex h IIIC T80 ... T440°C -/Dc	European Union
IEC IECEx	**IECEx (option)** Hazardous areas - Ex h Zone 0/1, gas [2] II 1/2G Ex h IIB T6 ... T1 Ga/Gb X Zone 0/1, gas [2] II 1/2G Ex h IIC T6 ... T1 Ga/Gb X Zone 2, gas II 3/3G Ex h IIC T6 ... T1 Gc/Gc X Zone 0/1, dust [2] II -/2D Ex h IIIC T68 ... T360°C -/Db X Zone 0/1, dust [2] II -/2D Ex h IIIC T68 ... T360°C -/Db X Zone 2, dust II -/3D Ex h IIIC T80 ... T440°C -/Dc X	International
	GOST (option) Metrology [1], measurement technology	Russia
DNV GL	**DNV GL (option)** ■ Ships, shipbuilding (e.g. offshore) ■ Hazardous areas - Ex c Zone 0/1, gas II 1/2 G c T1 ... T6	International
ABS	**ABS (option)** Ships, shipbuilding (e.g. offshore)	International

Models BNA-SD, BNA-HD, BNA-L

Logo	Description	Country
CE Ex	**EU declaration of conformity** ■ Pressure equipment directive ■ ATEX directive (option) Hazardous areas - Ex h Zone 0/1, gas II 1/2 G c T1 ... T6 Zone 0/1, gas [2] II 1/2G Ex h IIB T6 ... T1 Ga/Gb Zone 2, gas II 3/3G Ex h IIC T6 ... T1 Gc/Gc Zone 0/1, dust [2] II -/2D Ex h IIIC T68 ... T360°C C-/Db Zone 2, dust II -/3D Ex h IIC T80 ... T440°C -/Dc	European Union
IEC IECEx	**IECEx (option)** Hazardous areas - Ex h Zone 0/1, gas G c T1 ... T6 Zone 0/1, gas [2] Ex h IIB T6 ... T1 Ga/Gb Zone 2, gas Ex h IIC T6 ... T1 Gc/Gc Zone 0/1, dust [2] Ex h IIIC T68 ... T360°C C-/Db Zone 2, dust Ex h IIC T80 ... T440°C -/Dc	International
	GOST (option) Metrology [1], measurement technology	Russia

Models BNA-X, BNA-J

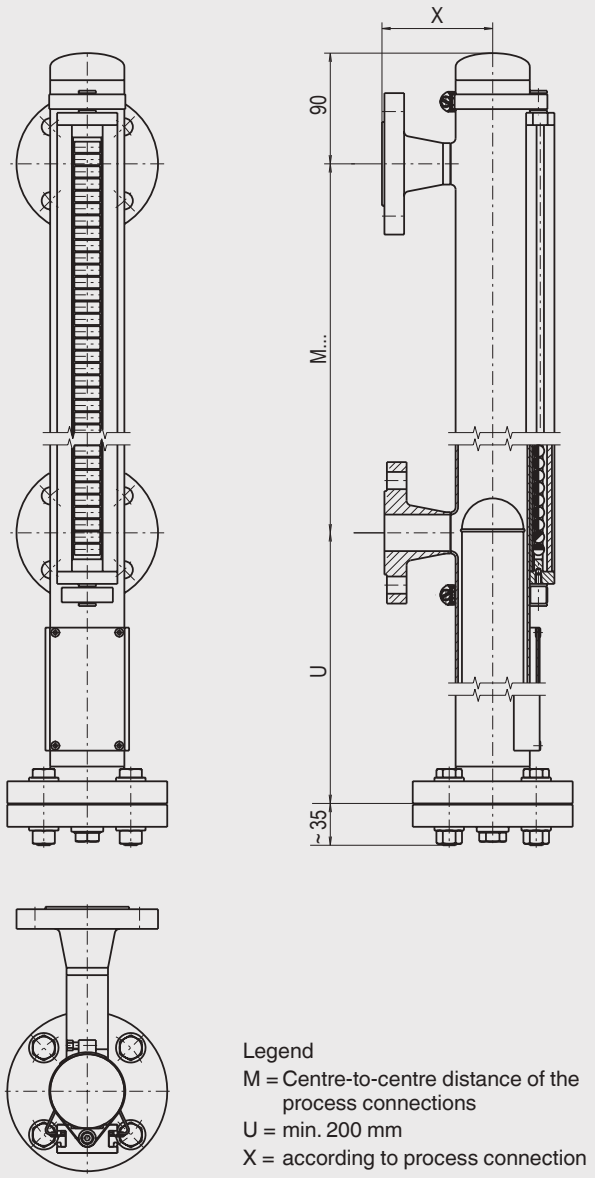
Logo	Description	Country
CE Ex	**EU declaration of conformity** ■ Pressure equipment directive ■ ATEX directive (option) Hazardous areas - Ex h Zone 0/1, gas II 1/2 G c T1 ... T6 Zone 0/1, gas [2] II 1/2G Ex h IIB T6 ... T1 Ga/Gb Zone 2, gas II 3/3G Ex h IIC T6 ... T1 Gc/Gc Zone 0/1, dust [2] II -/2D Ex h IIIC T68 ... T360°C C-/Db Zone 2, dust II -/3D Ex h IIC T80 ... T440°C -/Dc	European Union
IEC IECEx	**IECEx (option)** Hazardous areas - Ex h Zone 0/1, gas G c T1 ... T6 Zone 0/1, gas [2] Ex h IIB T6 ... T1 Ga/Gb Zone 2, gas Ex h IIC T6 ... T1 Gc/Gc Zone 0/1, dust [2] Ex h IIIC T68 ... T360°C C-/Db Zone 2, dust Ex h IIC T80 ... T440°C -/Dc	International
	GOST (option) Metrology [1], measurement technology	Russia
	DNV GL (option) - not for version with internal coating ■ Ships, shipbuilding (e.g. offshore) ■ Hazardous areas - Ex c Zone 0/1, gas II 1/2 G c T1 ... T6	International

1) Only in combination with electrical components
2) With plastic cover on the display bar

Other approvals on request.
Approvals and certificates, see website

Standard version, model BNA-S

Bypass chamber from stainless steel



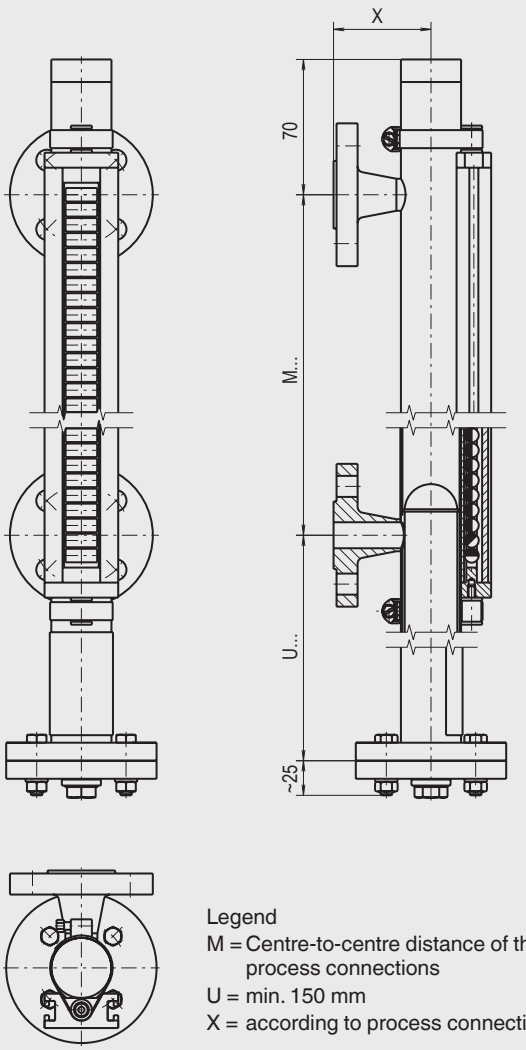
Legend
M = Centre-to-centre distance of the process connections
U = min. 200 mm
X = according to process connection

Specifications	
Bypass chamber	Ø 60.3 x 2 mm, max. 63 bar Ø 60.3 x 2.77 mm, max. 100 bar
Chamber end top	Pipe cap or flange connection ■ Vent screw ■ Vent valve ■ Vent flange → Options see page 17
Chamber end bottom	Flange connection ■ Drain plug ■ Drain valve ■ Drain flange → Options see page 17
Process connections	2 x lateral (options see page 18)
Mounting flange	■ EN 1092-1, DN 10 ... DN 100, PN 6 ... PN 100 ■ DIN, DN 10 ... DN 100, PN 6 ... PN 100 ■ Flange ANSI B 16.5, 1/2" ... 4", class 150 ... class 900
Weld stub	1/2" ... 1"
Threaded bushing	■ G 1/2 ... 1 ■ 1/2 ... 1 NPT
Threaded nipple	■ G 1/2 ... 1 ■ 1/2 ... 1 NPT
Centre-to-centre distance	Min. 150 mm to max. 6,000 mm Larger distances on request
Material	■ Stainless steel 1.4571 (316Ti) ■ Stainless steel 1.4401/1.4404 (316/316L)
Max. nominal pressure	100 bar
Temperature range	-196 ... +450 °C
Float	■ Cylindrical float ■ Corrugated float
Magnetic display	Standard version: < 200 °C High-temperature version: > 200 °C

Special versions on request

Compact version, model BNA-C

Bypass chamber from stainless steel



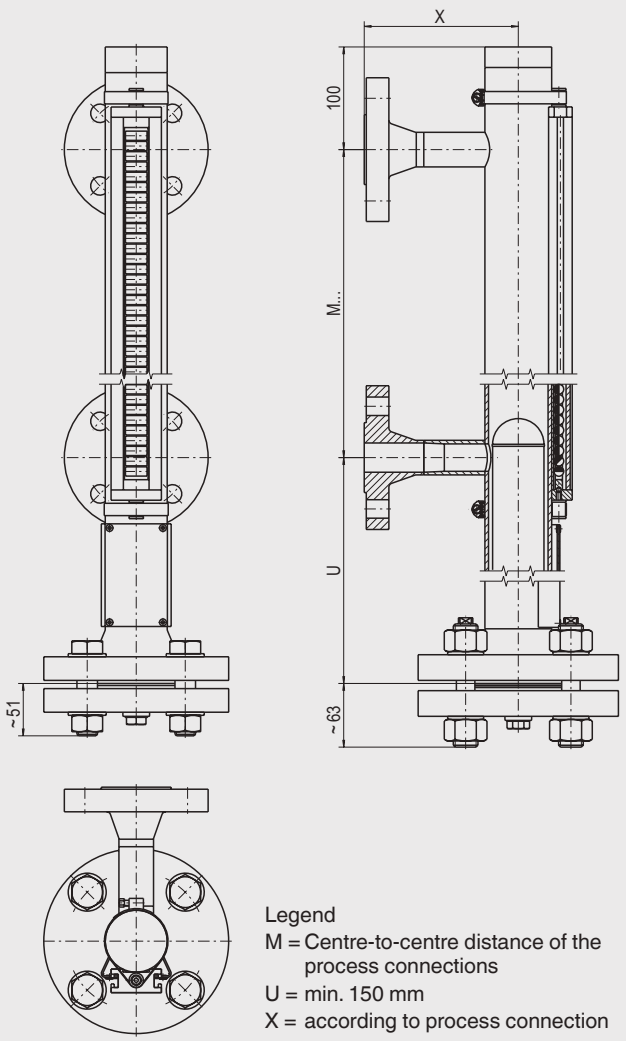
Legend
M = Centre-to-centre distance of the process connections
U = min. 150 mm
X = according to process connection

Specifications	
Bypass chamber	Ø 42.2 x 2 mm, max. 40 bar
Chamber end top	Pipe cap, flange or threaded connection ■ Vent screw ■ Vent valve ■ Vent flange → Options see page 17
Chamber end bottom	Flange connection or threaded connection ■ Drain plug ■ Drain valve ■ Drain flange → Options see page 17
Process connections	2 x lateral (options see page 18)
Mounting flange	■ EN 1092-1, DN 10 ... DN 50, PN 6 ... PN 40 ■ 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 1/2 ... 1 ■ 1/2 ... 1 NPT
Threaded nipple	■ G 1/2 ... 1 ■ 1/2 ... 1 NPT
Centre-to-centre distance	Min. 150 mm to max. 5,000 mm
Material	Stainless steel 1.4571 (316Ti)
Max. nominal pressure	40 bar
Temperature range	-196 ... +200 °C
Float	Cylindrical float

Special versions on request

High-pressure version, model BNA-H

Bypass chamber from stainless steel



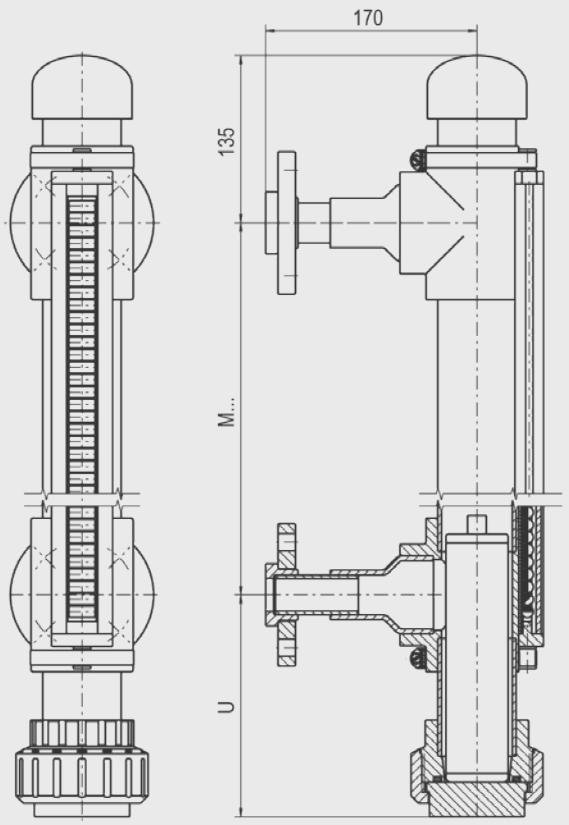
Legend
M = Centre-to-centre distance of the process connections
U = min. 150 mm
X = according to process connection

Specifications	
Bypass chamber	
Stainless steel 1.4571	Ø 60.3 x 3.91 mm, max. 160 bar Ø 76.1 x 5 mm, max. 100 bar Ø 71 x 7.5 mm, max. 250 bar Ø 76.1 x 10 mm, max. 385 bar
Stainless steel 1.4401/1.4404	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. 150 bar
Chamber end top	Pipe cap or flange connection ■ Vent screw ■ Vent valve ■ Vent flange → Options see page 17
Chamber end bottom	Flange connection ■ Drain plug ■ Drain valve ■ Drain flange → Options see page 17
Process connections	2 x lateral (options see page 18)
Mounting flange	■ EN 1092-1, DN 10 ... DN 100, PN 63 ... PN 400 ■ 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 1/2 ... 1 ■ 1/2 ... 1 NPT
Threaded nipple	■ G 1/2 ... 1 ■ 1/2 ... 1 NPT
Centre-to-centre distance	Min. 150 mm to max. 6,000 mm Larger distances on request
Material	■ Stainless steel 1.4571 (316Ti) ■ Stainless steel 1.4401/1.4404 (316/316L)
Max. nominal pressure	385 bar
Temperature range	-196 ... +450 °C
Float	■ Cylindrical float ■ Ball-segment float ■ Foam float
Magnetic display	Standard version: < 200 °C High-temperature version: > 200 °C

Special versions on request

Plastic version, model BNA-P

Bypass chamber and float from PVDF or PP



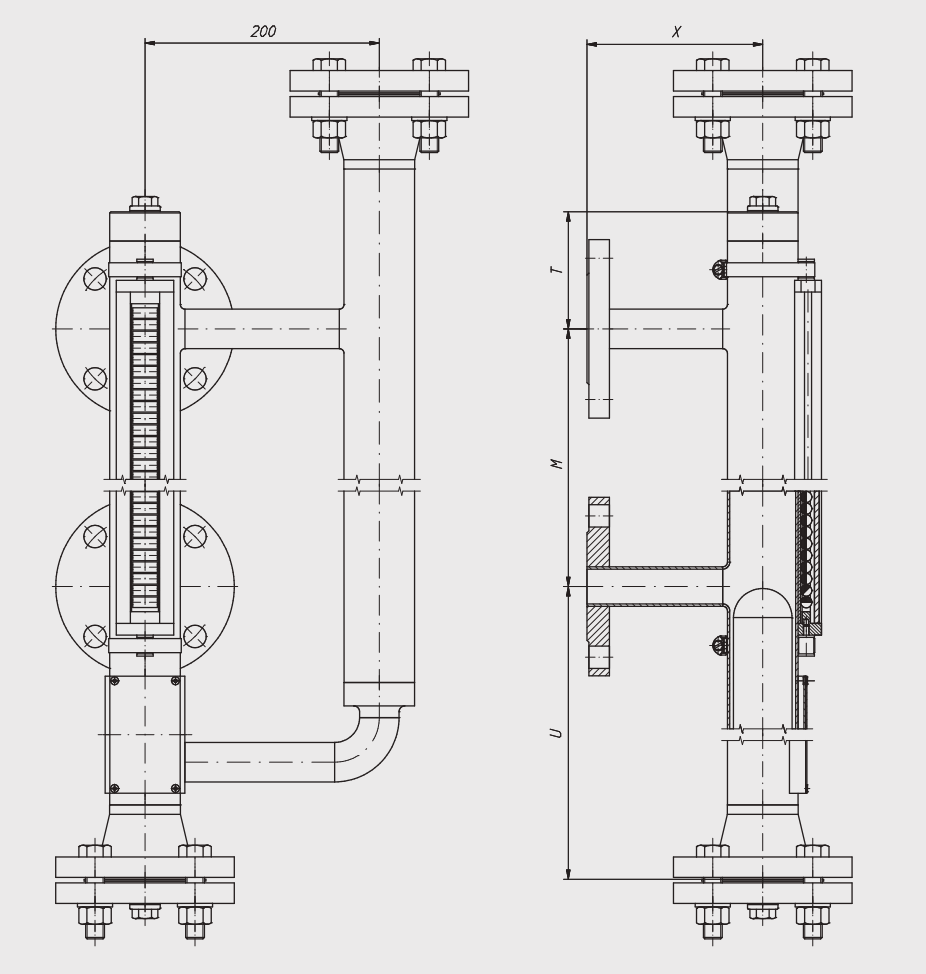
Legend
M = Centre-to-centre distance of the process connections
U = min. 150 mm

Specifications	
Bypass chamber	Ø 63 x 3 mm, max. 6 bar
Chamber end top	Pipe cap or threaded connection ■ Vent screw ■ Vent valve ■ Vent flange → Options see page 17
Chamber end bottom	Threaded connection ■ Drain plug ■ Drain valve ■ Drain flange → Options see page 17
Process connections	2 x lateral (options see page 18)
Mounting flange	■ EN 1092-1, DN 15 ... DN 50, PN 16 ■ 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 1/2 ... 1 ■ 1/2 ... 1 NPT
Threaded nipple	■ G 1/2 ... 1 ■ 1/2 ... 1 NPT
Centre-to-centre distance	Min. 200 mm to max. 4,000 mm Larger distances on request
Material	■ PVDF ■ PP
Max. nominal pressure	6 bar
Temperature range	
PVDF	-10 … +100 °C
PP	-10 … +80 °C
Float	Plastic float

Special versions on request

DUPlus version, standard, model BNA-SD

Bypass chamber from stainless steel



Legend
M = Centre-to-centre distance of the process connections
U = min. 150 mm
X = according to process connection
T = min. 100 mm

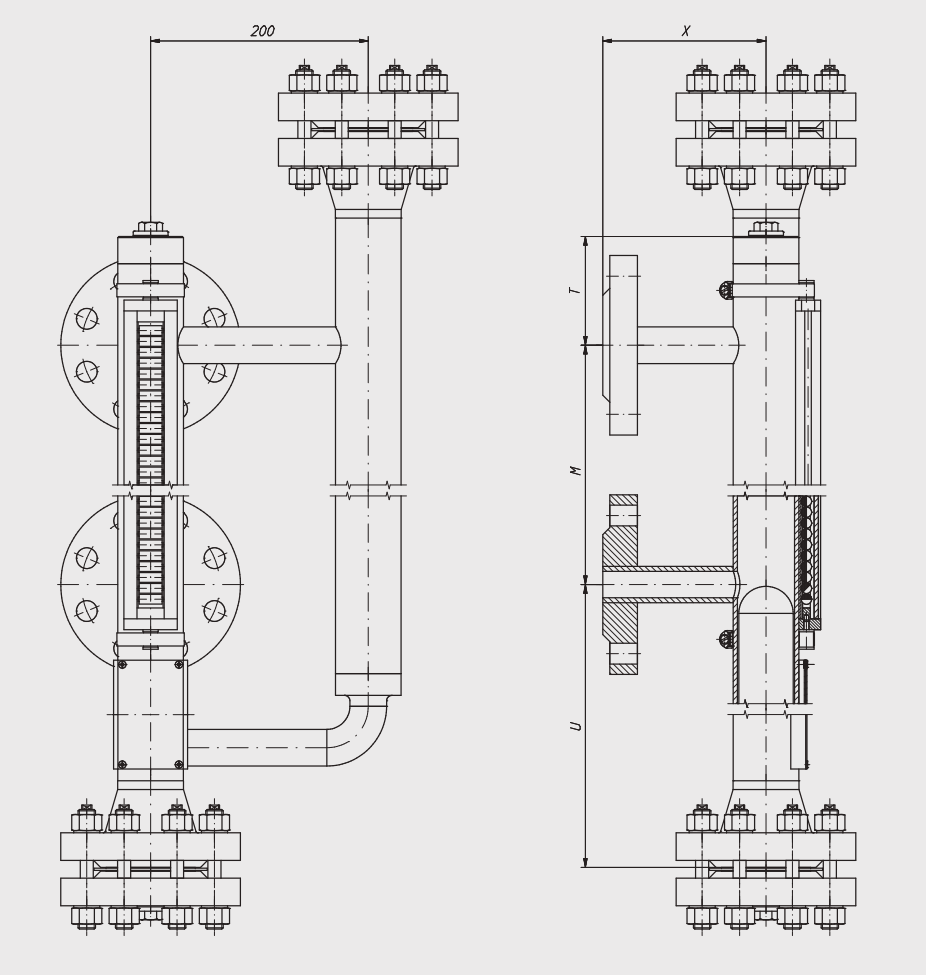
Specifications	
Bypass chamber	Ø 60.3 x 2 mm, max. 63 bar Ø 60.3 x 2.77 mm, max. 100 bar
Chamber end top	Flange connection ■ Vent screw ■ Vent valve ■ Vent flange → Options see page 17
Chamber end bottom	Pipe cap or flange connection ■ Drain plug ■ Drain valve ■ Drain flange → Options see page 17
Process connections	2 x lateral (options see page 18)
Mounting 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 1/2 ... 1 ■ 1/2 ... 1 NPT
Threaded nipple	■ G 1/2 ... 1 ■ 1/2 ... 1 NPT

Specifications	
External sensor connection	
Mounting flange	■ EN 1092-1, DN 50, PN 6 ... PN 64 ■ DIN, DN 50, PN 6 ... PN 64 ■ ANSI B 16.5, 2" class 150 ... class 600
Female thread	■ G 3/4 ... 2 ■ 3/4 ... 2 NPT
Centre-to-centre distance	Min. 150 mm to max. 6,000 mm Larger distances on request
Material	■ Stainless steel 1.4571 (316Ti) ■ Stainless steel 1.4401/1.4404 (316/316L)
Max. nominal pressure	100 bar
Temperature range	-196 ... +450 °C
Float	■ Cylindrical float ■ Corrugated float
Magnetic display	Standard version: < 200 °C High-temperature version: > 200 °C

Special versions on request

DUPlus version, high pressure, model BNA-HD

Bypass chamber from stainless steel



Legend
M = Centre-to-centre distance of the process connections
U = min. 150 mm
X = according to process connection
T = min. 100 mm

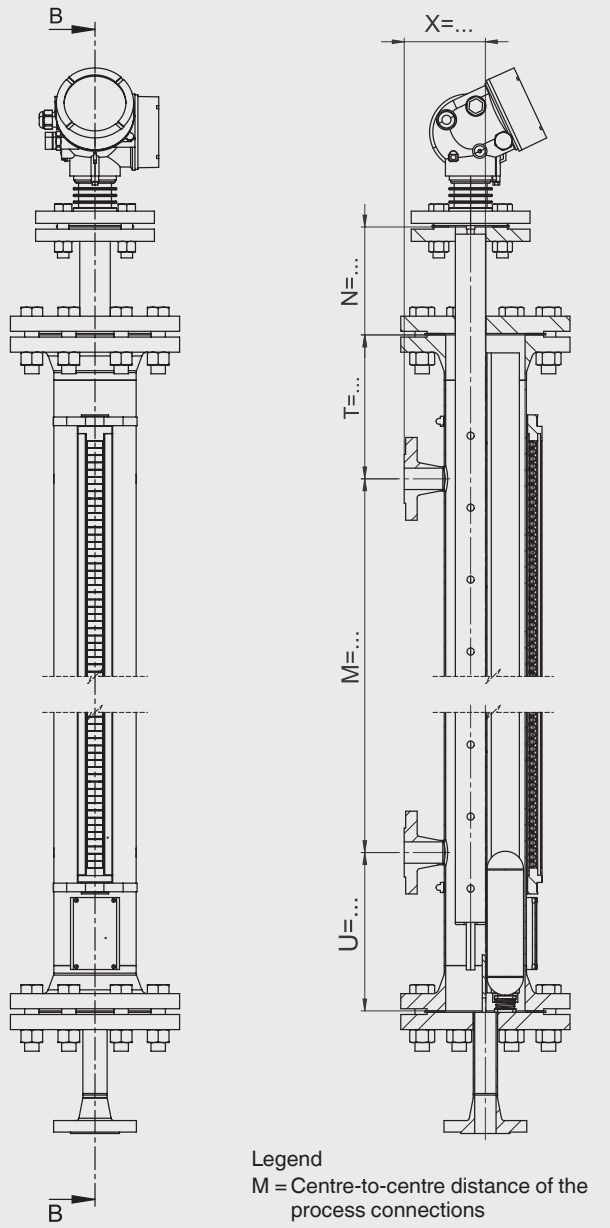
Specifications	
Bypass chamber	Ø 60.3 x 3.91 mm, max. 160 bar
Chamber end top	Flange connection ■ Vent screw ■ Vent valve ■ Vent flange → Options see page 17
Chamber end bottom	Pipe cap or flange connection ■ Drain plug ■ Drain valve ■ Drain flange → Options see page 17
Process connections	2 x lateral (options see page 18)
Mounting 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 1/2 ... 1 ■ 1/2 ... 1 NPT
Threaded nipple	■ G 1/2 ... 1 ■ 1/2 ... 1 NPT

Specifications	
External sensor connection	
Mounting flange	■ EN 1092-1, DN 50, PN 6 ... PN 160 ■ DIN, DN 50, PN 6 ... PN 160 ■ ANSI B 16.5, 2" class 150 ... class 1,500
Female thread	■ G 3/4 ... 2 ■ 3/4 ... 2 NPT
Centre-to-centre distance	Min. 150 mm to max. 6,000 mm Larger distances on request
Material	■ Stainless steel 1.4571 (316Ti) ■ Stainless steel 1.4401/1.4404 (316/316L)
Max. nominal pressure	160 bar
Temperature range	-196 ... +450 °C
Float	■ Cylindrical float ■ Corrugated float
Float	■ Cylindrical float ■ Corrugated float ■ Ball-segment float ■ Foam float
Magnetic display	Standard version: < 200 °C High-temperature version: > 200 °C

Special versions on request

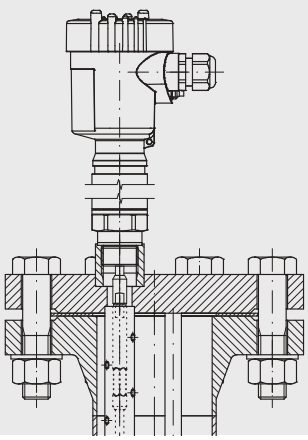
Liquid gas/KOPlus version, model BNA-L

Bypass chamber from stainless steel



Legend
M = Centre-to-centre distance of the process connections
U = min. 220 mm

KOPlus version

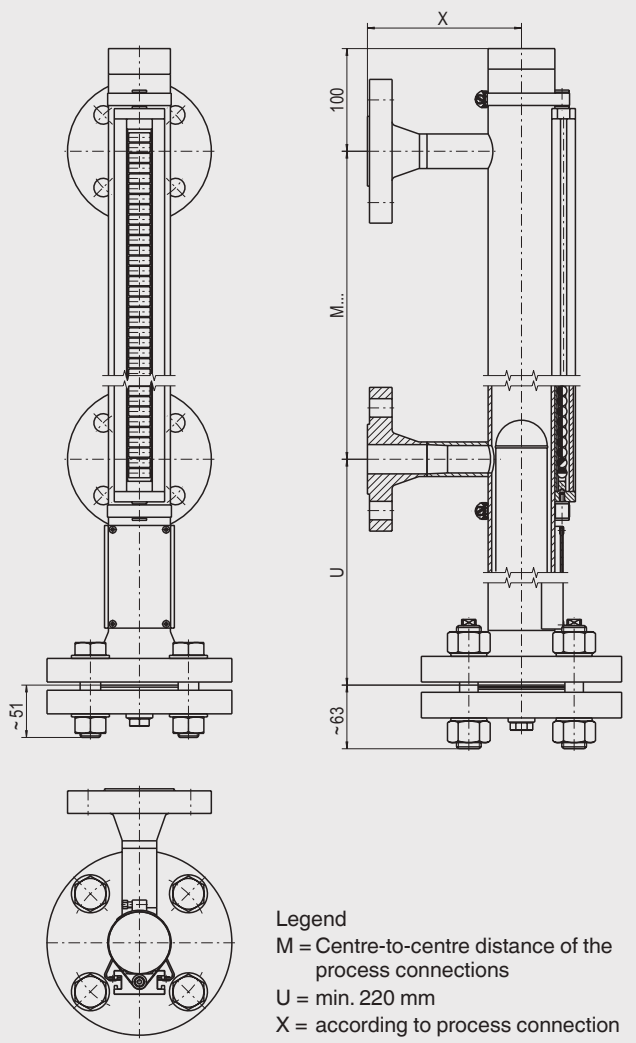


Specifications	
Bypass chamber	
Stainless steel 1.4571	Ø 88.9 x 2 mm, max. 40 bar Ø 88.9 x 2.9 mm, max. 40 bar Ø 114 x 2 mm, max. 25 bar Ø 114 x 3.6 mm, max. 40 bar Ø 114 x 4.5 mm, max. 40 bar Ø 114 x 6.3 mm, max. 63 bar
Stainless steel 1.4401/1.4404	Ø 88.9 x 2 mm, max. 40 bar Ø 88.9 x 3.05 mm, max. 40 bar Ø 114 x 2 mm, max. 25 bar Ø 114 x 3.05 mm, max. 40 bar Ø 114 x 6.02 mm, max. 63 bar
Chamber end top	Flange connection ■ Vent screw ■ Vent valve ■ Vent flange → Options see page 17
Chamber end bottom	Flange connection ■ Drain plug ■ Drain valve ■ Drain flange → Options see page 17
Process connections	2 x lateral (options see page 18)
Mounting flange	■ EN 1092-1, DN 10 ... DN 100, PN 6 ... PN 63 ■ 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 1/2 ... 1 ■ 1/2 ... 1 NPT
Threaded nipple	■ G 1/2 ... 1 ■ 1/2 ... 1 NPT
Centre-to-centre distance	Min. 150 mm to max. 6,000 mm Larger distances on request
Material	■ Stainless steel 1.4571 (316Ti) ■ Stainless steel 1.4401/1.4404 (316/316L)
Max. nominal pressure	63 bar
Temperature range	-196 ... +450 °C
Float	Cylindrical float
Magnetic display	Standard version: < 200 °C High-temperature version: > 200 °C

Special versions on request

Special materials, model BNA-X

Bypass chamber from titanium, Hastelloy or stainless steel 6Mo



Legend
M = Centre-to-centre distance of the process connections
U = min. 220 mm
X = according to process connection

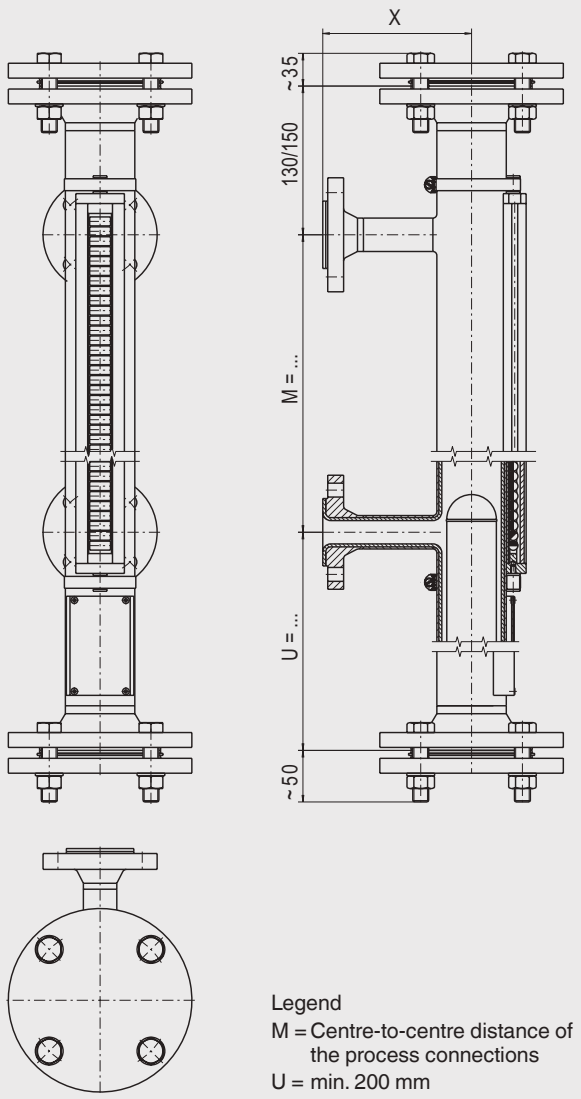
Specifications	
Bypass chamber	
Titanium 3.7035	Ø 60.3 x 2 mm, max. 16 bar Ø 60.3 x 2.77 mm, max. 40 bar
Hastelloy C276	Ø 60.3 x 2.77 mm, max. 50 bar Ø 60.3 x 3.91 mm, max. 160 bar
Stainless steel 6Mo 1.4547 (UNS S31254)	Ø 60.3 x 2.77 mm, max. 50 bar Ø 60.3 x 3.91 mm, max. 160 bar Ø 60.3 x 5.54 mm, max. 250 bar
Chamber end top	Pipe cap or threaded connection ■ Vent screw ■ Vent valve ■ Vent flange → Options see page 17
Chamber end bottom	Flange connection ■ Drain plug ■ Drain valve ■ Drain flange → Options see page 17
Process connections	2 x lateral (options see page 18)
Titanium 3.7035	Mounting flange ■ EN 1092-1, DN 10 ... DN 100, PN 6 ... PN 63 ■ DIN, DN 10 ... DN 100, PN 6 ... PN 64 ■ Flange ANSI B 16.5, 1/2" ... 4", class 150 ... class 600
Hastelloy C276	Mounting flange ■ EN 1092-1, DN 10 ... DN 100, PN 6 ... PN 400 ■ DIN, DN 10 ... DN 100, PN 6 ... PN 400 ■ Flange ANSI B 16.5, 1/2" ... 4", class 150 ... class 2,500
Stainless steel 6Mo 1.4547 (UNS S31254)	Mounting flange ■ EN 1092-1, DN 10 ... DN 100, PN 63 ... PN 400 ■ 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
Material	■ PVDF ■ PP
Max. nominal pressure	
Titanium 3.7035	40 bar
Hastelloy C276	160 bar
Stainless steel 6Mo 1.4547 (UNS S31254)	250 bar
Temperature range	-10 … +450 °C
Float	■ Cylindrical float ■ Corrugated float
Magnetic display	Standard version: < 200 °C High-temperature version: > 200 °C

1) Other materials on request

Special versions on request

Special materials, model BNA-X

Bypass chamber from stainless steel with internal coating E-CTFE



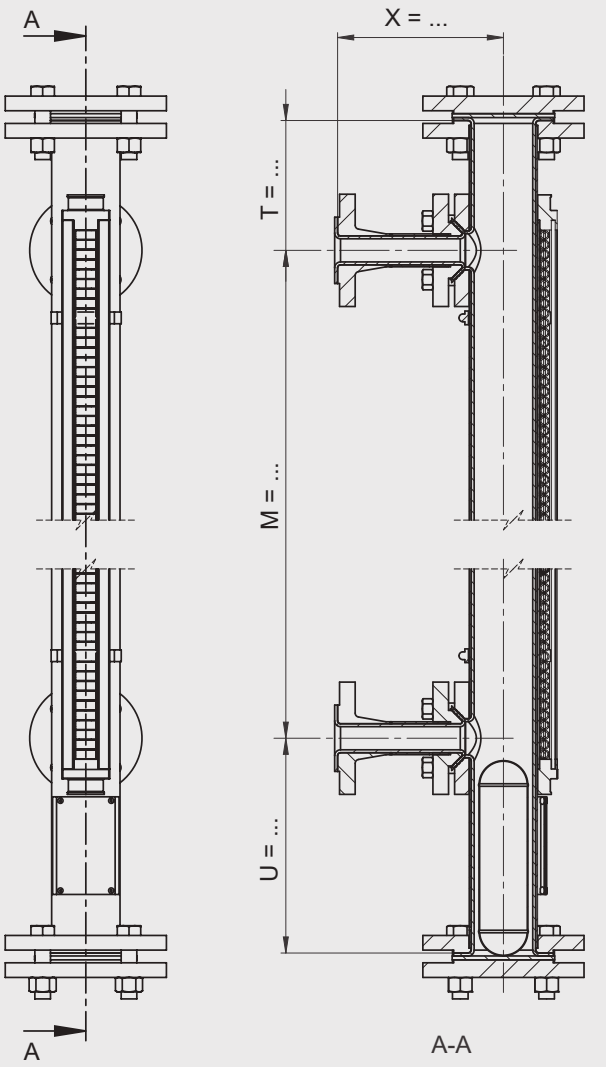
Legend
M = Centre-to-centre distance of the process connections
U = min. 200 mm

Specifications	
Bypass chamber	Ø 64 x 2 mm, max. 16 bar
Chamber end top	Flange connection ■ Vent flange → Options see page 17
Chamber end bottom	Flange connection ■ Drain flange → Options see page 17
Process connections	2 x lateral (options see page 18)
Mounting flange	■ EN 1092-1, DN 10 ... DN 50, PN 6 ... PN 16 ■ 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	
Overall pipe length < 2,500 mm	Min. 150 mm to max. ... mm
Overall pipe length > 2,500 mm	Bypass chamber separated by flange connection
Material	Stainless steel 1.4571 with internal coating E-CTFE
Max. nominal pressure	16 bar
Temperature range	Depending on medium
Float	Cylindrical float

Special versions on request

Special materials, model BNA-X

Bypass chamber from stainless steel with internal coating PTFE



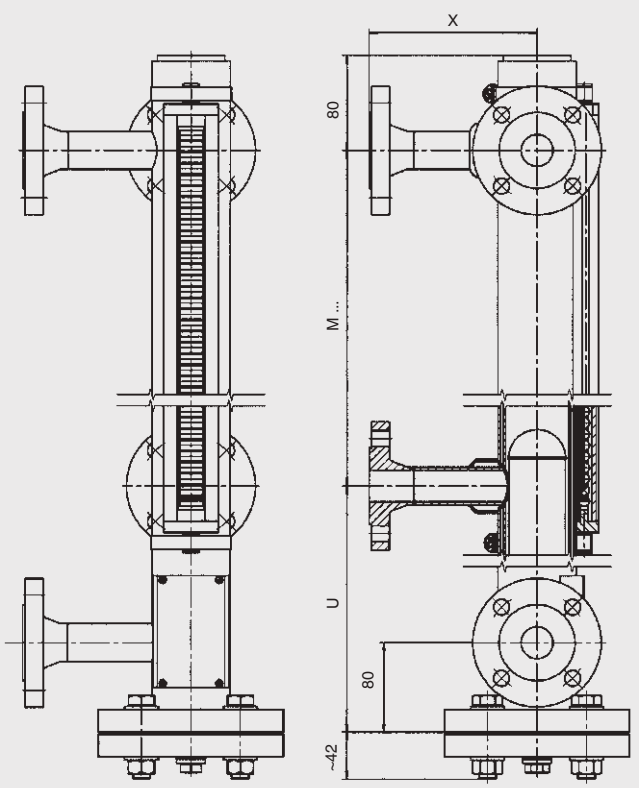
Legend
M = Centre-to-centre distance of the process connections
U = min. 200 mm
X = according to process connection
T = min. 150 mm

Specifications	
Bypass chamber	Ø 70 x 2 mm, max. 10 bar
Chamber end top	Flange connection ■ Vent flange → Options see page 17
Chamber end bottom	Flange connection ■ Drain flange → Options see page 17
Process connections	2 x lateral (options see page 18)
Mounting flange	■ EN 1092-1, DN 10 ... DN 50, PN 6 ... PN 16 ■ 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	
Overall pipe length < 2,500 mm	Min. 150 mm to max. ... mm
Overall pipe length > 2,500 mm	Bypass chamber separated by flange connection
Material	Stainless steel 1.4571 with internal coating PTFE
Max. nominal pressure	10 bar
Temperature range	Depending on medium
Float	Cylindrical float

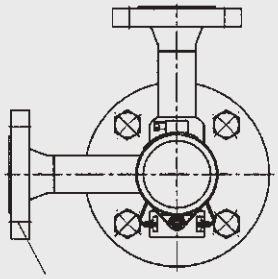
Special versions on request

Heating jacket version, model BNA-J

Bypass chamber and heating jacket pipe from stainless steel



Process connection



Heating jacket connection

Legend

M = Centre-to-centre distance of the process connections

U = min. 220 mm

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	Pipe cap ■ Vent screw ■ Vent valve ■ Vent flange → Options see page 17
Chamber end bottom	Flange connection ■ Drain plug ■ Drain valve ■ Drain flange → Options see page 17
Process connections	2 x lateral (options see page 18)
Mounting flange	■ EN 1092-1, DN 10 ... DN 100, PN 6 ... PN 100 ■ 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 1/2 ... 1 ■ 1/2 ... 1 NPT
Threaded nipple	■ G 1/2 ... 1 ■ 1/2 ... 1 NPT
Heating jacket connection	
Mounting flange	■ EN 1092-1, DN 10 ... DN 25, PN 6 ... PN 40 ■ DIN, DN 10 ... DN 25, PN 6 ... PN 40 ■ Flange ANSI B 16.5, 1/2" ... 4", class 150 ... class 300
Threaded bushing	■ G 1/2 ... 1 ■ 1/2 ... 1 NPT
Threaded nipple	■ G 1/2 ... 1 ■ 1/2 ... 1 NPT
Centre-to-centre distance	Min. 150 mm to max. 6,000 mm Larger distances on request
Material	■ Stainless steel 1.4571 (316Ti) ■ Stainless steel 1.4401/1.4404 (316/316L)
Max. nominal pressure	64 bar
Temperature range	-60 ... +450 °C
Float	Cylindrical float
Magnetic display	Standard version: < 200 °C High-temperature version: > 200 °C

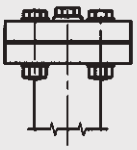
Special versions on request

Options for chamber ends

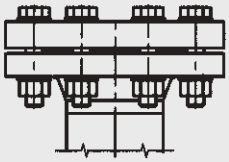
Chamber end top (examples)

1
Pipe cap without venting

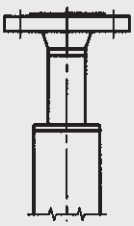
2
Pipe cap with vent screw G 1/2"



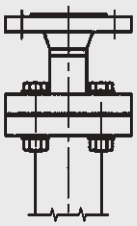
3
Flange connection with vent screw G 1/2"



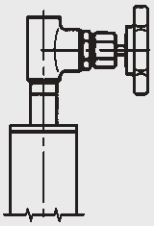
4
Flange connection e.g. sealing faces groove/tongue per DIN 2512



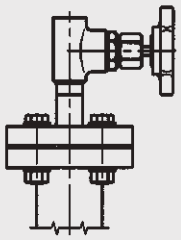
5
Pipe cap with vent flange



6
Flange connection Vent flange

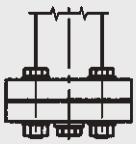


7
Pipe cap with vent valve

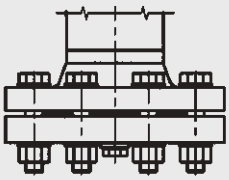


8
Flange connection with vent valve

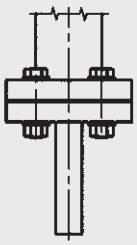
Chamber end bottom (examples)



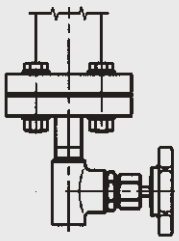
9
Flange connection with drain plug G/NPT 1/2"



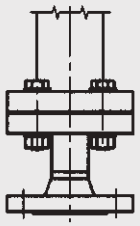
10
Flange connection e.g. sealing faces groove/tongue per DIN 2512 with drain plug G 1/2"



11
Flange connection with drain nozzle



12
Flange connection with drain valve

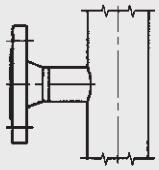


13
Flange connection with drain flange

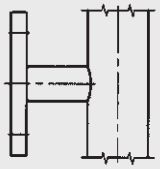
Other options on request

Option process connection

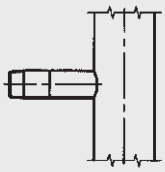
Process connection (examples)



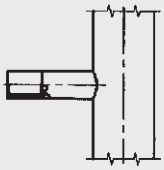
14
Welding neck flange
up to DN 25



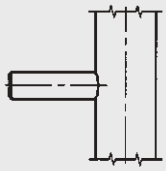
15
Blind flange
above DN 32



16
Threaded coupling GN ...
(male thread)

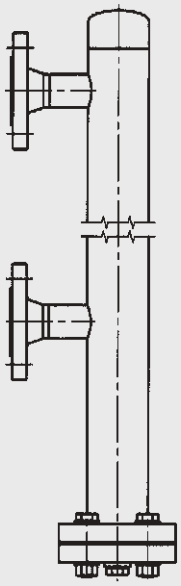


17
Threaded coupling GM ...
(female thread)

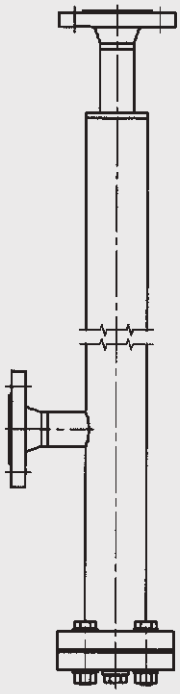


18
Weld stub S ...

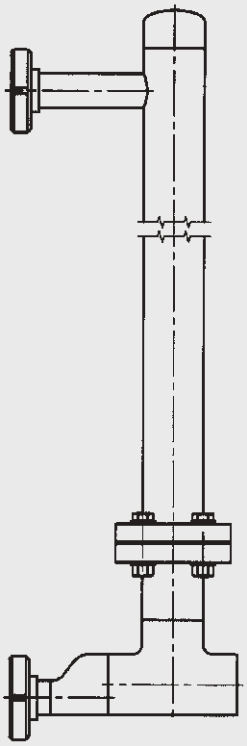
Complete instrument (examples)



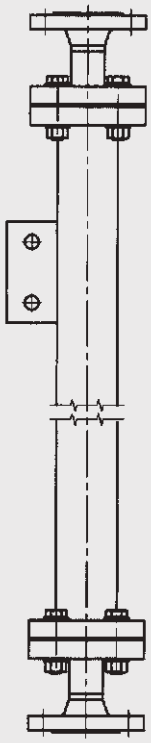
19
Standard version
Process connections 2 x lateral



20
1 lateral process connection
1 vertical process connection
(top)



21
2 process connections per
DIN 11851
Lower process connection
via eccentric reducer



22
2 vertical process
connections (top/bottom)
Option: Support bracket

Other connections on request

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

For detailed information on floats, magnetic displays, level transmitters (reed chain and magnetostrictive) and magnetic switches see the following data sheets:

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

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