

# External chamber

## For level measurement with inserted sensors

### Model BZG

WIKA data sheet LM 11.01

#### Applications

- Level detection for almost all liquid media
- 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

#### Special features

- Process- and procedure-specific production
- Operating limits:
  - Operating temperature:  $T = -196 \dots +450 \text{ }^\circ\text{C}$
  - Operating pressure:  $P = \text{Vacuum up to 400 bar}$
- Wide variety of different process connections and materials
- Mounting of level sensors and guided wave radars possible as an option

#### Description

The external chamber model BZG consists of an external chamber vessel that is mounted laterally to a vessel using at least 2 process connections (flange, thread or weld stub). Through this type of arrangement, the level in the external chamber corresponds to the level in the vessel.

The level is measured by a measuring instrument inserted additionally in the external chamber, for example model FLR or FLS, or by a guided wave radar.



External chamber, model BZG

## Model overview

Model	Description	Materials	Max. operating pressure in bar	Max. operating temperature in °C
BZG-S	Standard version	Stainless steel 1.4571 (316Ti)	64 bar	-196 ... +450 °C
		Stainless steel 1.4401/1.4404 (316/316L)	64 bar	-196 ... +450 °C
BZG-H	High-pressure version	Stainless steel 1.4571 (316Ti)	400 bar	-196 ... +450 °C
		Stainless steel 1.4401/1.4404 (316/316L)	400 bar	-196 ... +450 °C
BZG-K	Steel version	Steel 1.0345/1.0460	250 bar	-10 ... +400 °C
		Steel 1.5415 (16Mo3)	250 bar	-10 ... +400 °C
		A105/A106 Gr. B	255 bar	-29 ... +400 °C
		A350 LF2/A333 Gr. 6	255 bar	-46 ... +425 °C
BZG-X	Special material version	Stainless steel 6Mo 1.4547 (UNS S31254)	250 bar	-29 ... +400 °C
		Stainless steel 1.4306 (304L)	41 bar	-196 ... +450 °C
		Duplex 1.4462 (UNS S31803)	430 bar	-40 ... +300 °C
		Super Duplex 1.4410 (UNS S3850)	430 bar	-40 ... +300 °C
		Titanium 3.7035 (grade 2)	78 bar	-60 ... +300 °C
		Hastelloy C276 (2.4819)	430 bar	-196 ... +500 °C

Other materials on request

### Design codes available

- AD2000
- ASME B31.3
- NORSOK
- EN 13445

## CE classification

Model	PED	CE	PED module used
BZG-S00, BZG-H00, BZG-X00, BZG-K00	-	-	-
BZG-SA1, BZG-HA1, BZG-XA1, BZG-KA1	x	x	Module A
BZG-SA2, BZG-HA2, BZG-XA2, BZG-KA2	x	x	Module A2
BZG-SBC, BZG-HBC, BZG-XBC, BZG-KBC	x	x	Module B + C2
BZG-SBD, BZG-HBD, BZG-XBD, BZG-KBD	x	x	Module B + D
BZG-SGE, BZG-HGE, BZG-XGE, BZG-KGE	x	x	Module G

## Approvals

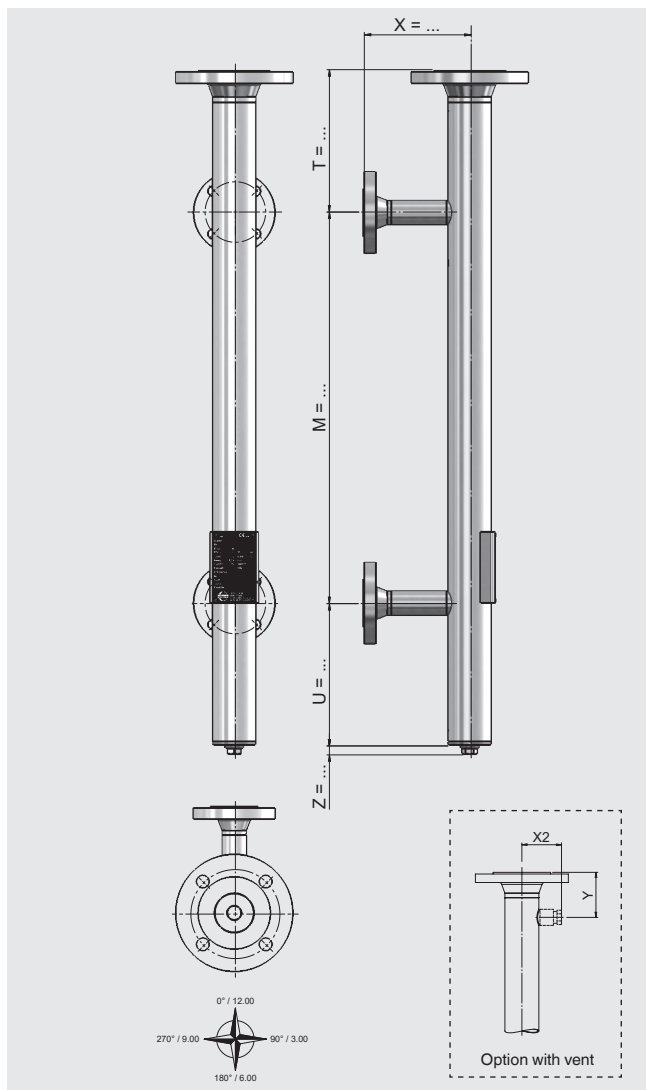
Logo	Description	Country
	<b>EU declaration of conformity</b> Pressure equipment directive (option)	European Union
	<b>EAC</b> Pressure equipment directive No. RU D-DE.MJU62.B.02027	Eurasian Economic Community

Approvals and certificates, see website

## External chamber, standard version

### Model BZG-S

External chamber and process connections made of stainless steel



Specifications	
<b>Chamber end top</b>	Flange <ul style="list-style-type: none"> <li>■ DIN EN 1092-1 DN 50 ... DN 100, PN 6 ... PN 63</li> <li>■ DIN DN 50 ... DN 100, PN 6 ... PN 64</li> <li>■ ANSI B 16.5 2" ... 4", class 150 ... 600</li> <li>■ Threaded bushing G / NPT 3/4" ... 2"</li> </ul>
<b>Chamber end bottom</b>	Flange connection or pipe cap <ul style="list-style-type: none"> <li>■ Drain plug</li> <li>■ Drain valve</li> <li>■ Drain flange</li> </ul> Options see page 9
<b>Process connections</b>	2 x lateral (options see page 10) Flange <ul style="list-style-type: none"> <li>■ DIN EN 1092-1 DN 10 ... DN 100, PN 6 ... PN 63</li> <li>■ DIN DN 10 ... DN 100, PN 6 ... PN 64</li> <li>■ ANSI B 16.5 1/2" ... 4", class 150 ... 600</li> </ul> Weld stub 1/2" ... 1" Threaded bushing G / NPT 1/2" ... 1" Threaded nipple G / NPT 1/2" ... 1"
<b>Centre-to-centre distance</b>	≥ 150 ... ≤ 6,000 mm (larger distances on request)
<b>Material</b>	<ul style="list-style-type: none"> <li>■ Stainless steel 1.4571 (316Ti)</li> <li>■ Stainless steel 1.4401/1.4404 (316/316L)</li> </ul>
<b>Max. nominal pressure</b>	64 bar
<b>Temperature range</b>	<ul style="list-style-type: none"> <li>■ Stainless steel 1.4571 (316Ti) -120 ... +400 °C</li> <li>■ Stainless steel 1.4401/1.4404 (316/316L) -196 ... +450 °C</li> </ul>

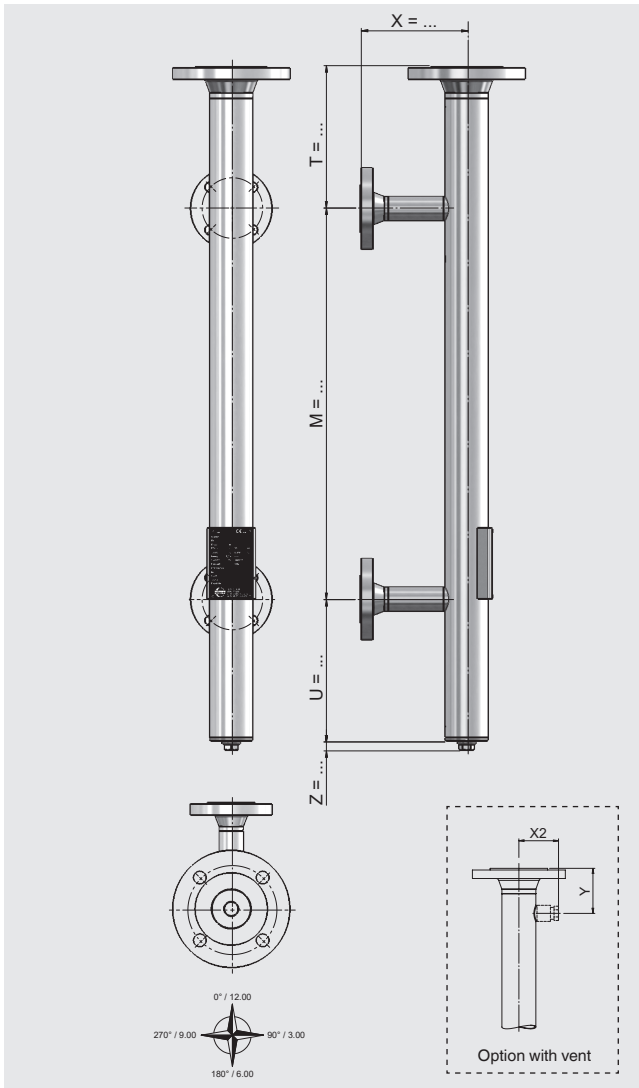
Special versions on request

### Chamber dimensions

Dimensions in mm	Stainless steel 1.4571 (316Ti)	Stainless steel 1.4401/1.4404 (316/316L)
60.3 x 2	x	x
60.3 x 2.77	x	x
88.9 x 2	x	x
88.9 x 3.05		x
114.3 x 2.6	x	
114.3 x 3.05		x

# External chamber, high-pressure version Model BZG-H

External chamber and process connections made of stainless steel



Specifications	
<b>Chamber end top</b>	Flange <ul style="list-style-type: none"> <li>■ DIN EN 1092-1 DN 50 ... DN 100, PN 100 ... PN 400</li> <li>■ DIN DN 50 ... DN 100, PN 100 ... PN 400</li> <li>■ ANSI B 16.5 2" ... 4", class 600 ... 2,500</li> <li>■ Threaded bushing G / NPT 3/4" ... 2"</li> </ul>
<b>Chamber end bottom</b>	Flange connection or pipe cap <ul style="list-style-type: none"> <li>■ Drain plug</li> <li>■ Drain valve</li> <li>■ Drain flange</li> </ul> Options see page 9
<b>Process connections</b>	2 x lateral (options see page 10) Flange <ul style="list-style-type: none"> <li>■ DIN EN 1092-1 DN 10 ... DN 100, PN 100 ... PN 400</li> <li>■ DIN DN 10 ... DN 100, PN 100 ... PN 400</li> <li>■ ANSI B 16.5 1/2" ... 4", class 600 ... 2,500</li> </ul> Weld stub 1/2" ... 1" Threaded bushing G / NPT 1/2" ... 1" Threaded nipple G / NPT 1/2" ... 1"
<b>Centre-to-centre distance</b>	≥ 150 ... ≤ 6,000 mm (larger distances on request)
<b>Material</b>	<ul style="list-style-type: none"> <li>■ Stainless steel 1.4571 (316Ti)</li> <li>■ Stainless steel 1.4401/1.4404 (316/316L)</li> </ul>
<b>Max. nominal pressure</b>	400 bar
<b>Temperature range</b>	<ul style="list-style-type: none"> <li>■ Stainless steel 1.4571 (316Ti) -120 ... +400 °C</li> <li>■ Stainless steel 1.4401/1.4404 (316/316L) -196 ... +450 °C</li> </ul>

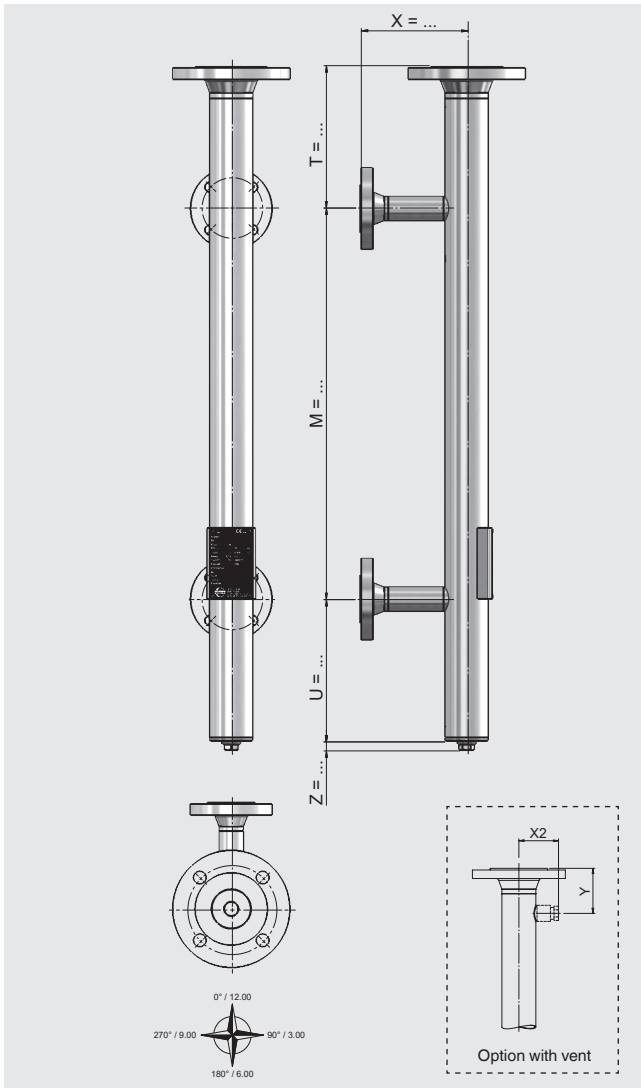
Special versions on request

## Chamber dimensions

Dimensions in mm	Stainless steel 1.4571 (316Ti)	Stainless steel 1.4401/1.4404 (316/316L)
60.3 x 3.91	x	x
60.3 x 5.54		x
60.3 x 8	x	
60.3 x 8.74		x
88.9 x 4.5	x	
88.9 x 5.49		x
88.9 x 7.62	x	x
88.9 x 11	x	
88.9 x 11.13		x
114.3 x 4	x	
114.3 x 6.02		x
114.3 x 7.1	x	
114.3 x 8.56		x
114.3 x 11.13		x

# External chamber, steel version Model BZG-K

External chamber and process connections made of steel



Specifications	
<b>Chamber end top</b>	Flange <ul style="list-style-type: none"> <li>■ DIN EN 1092-1 DN 50 ... DN 100, PN 16 ... PN 400</li> <li>■ DIN DN 50 ... DN 100, PN 16 ... PN 400</li> <li>■ ANSI B 16.5 2" ... 4", class 150 ... 2,500</li> </ul>
<b>Chamber end bottom</b>	Flange connection or pipe cap <ul style="list-style-type: none"> <li>■ Drain plug</li> <li>■ Drain valve</li> <li>■ Drain flange</li> </ul> Options see page 9
<b>Process connections</b>	2 x lateral (options see page 10)  Flange <ul style="list-style-type: none"> <li>■ DIN EN 1092-1 DN 10 ... DN 50, PN 16 ... PN 400</li> <li>■ DIN DN 10 ... DN 50, PN 16 ... PN 400</li> <li>■ ANSI B 16.5 ½" ... 4", class 150 ... 2,500</li> </ul> Weld stub ½" ... 1" Threaded bushing G / NPT ½" ... 1" Threaded nipple G / NPT ½" ... 1"
<b>Centre-to-centre distance</b>	≥ 150 ... ≤ 6,000 mm (larger distances on request)
<b>Material</b>	<ul style="list-style-type: none"> <li>■ Steel 1.0345/1.0460</li> <li>■ Steel 1.5415 (16Mo3)</li> <li>■ Steel A105/A106 Gr. B</li> <li>■ Steel A350 LF2/A333 Gr. 6</li> </ul>
<b>Max. nominal pressure</b>	<ul style="list-style-type: none"> <li>■ Steel 1.0345/1.0460, 1.5415 (16Mo3) 250 bar</li> <li>■ Steel A105/A106 Gr. B, A350 LF2/A333 Gr. 6 255 bar</li> </ul>
<b>Temperature range</b>	<ul style="list-style-type: none"> <li>■ Steel 1.0345/1.0460, 1.5415 (16Mo3) -10 ... +400 °C</li> <li>■ Steel A105/A106 Gr. B -29 ... +400 °C</li> <li>■ Steel A350 LF2/A333 Gr. 6 -46 ... +425 °C</li> </ul>

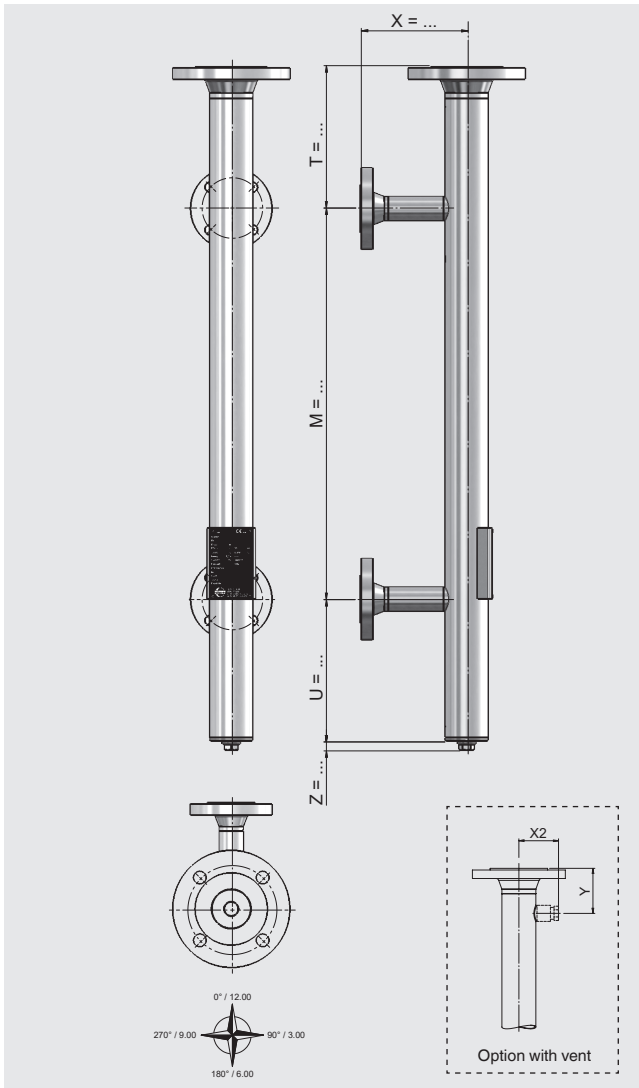
Special versions on request  
 Paintings on request

**Chamber dimensions model BZG-K (made of steel)**

Dimensions in mm	Steel 1.0345/1.0460	Steel 1.5415 (16Mo3)	Steel A105/A106 Gr. B	Steel A350 LF2/A333 Gr. 6
60.3 x 3.6	x	x		
60.3 x 3.91			x	x
60.3 x 4	x	x		
60.3 x 5.54			x	x
60.3 x 5.6	x	x		
60.3 x 7.1	x	x		
60.3 x 8.74			x	x
60.3 x 8.8	x	x		
60.3 x 11.07			x	x
73 x 3.05			x	x
73 x 5.16			x	x
73 x 7.01			x	x
73 x 9.53			x	x
73 x 14.02			x	x
76.1 x 3.6	x	x		
76.1 x 5.6	x	x		
76.1 x 7.1	x	x		
76.1 x 8	x	x		
76.1 x 10	x	x		
76.1 x 14.2	x			
88.9 x 4	x	x		
88.9 x 5.49			x	x
88.9 x 5.6	x	x		
88.9 x 7.62			x	x
88.9 x 8	x	x		
88.9 x 8.8	x	x		
88.9 x 11	x	x		
88.9 x 11.13			x	x
88.9 x 15.24			x	x
88.9 x 16	x			
114.3 x 4.5	x	x		
114.3 x 6.02			x	x
114.3 x 6.3	x	x		
114.3 x 8.8	x	x		
114.3 x 11	x	x		
114.3 x 11.13			x	x
114.3 x 13.49			x	x
114.3 x 14.2	x	x		
114.3 x 17.12			x	x
114.3 x 17.5	x			

## External chamber, special material version Model BZG-X

External chamber and process connections made of austenitic and ferritic stainless steel



Specifications	
<b>Chamber end top</b>	Flange <ul style="list-style-type: none"> <li>■ DIN EN 1092-1 DN 50 ... DN 100, PN 63 ... PN 400</li> <li>■ DIN DN 50 ... DN 100, PN 64 ... PN 400</li> <li>■ ANSI B 16.5 2" ... 4", class 600 ... 2,500</li> </ul>
<b>Chamber end bottom</b>	Flange connection or pipe cap <ul style="list-style-type: none"> <li>■ Drain plug</li> <li>■ Drain valve</li> <li>■ Drain flange</li> </ul> Options see page 9
<b>Process connections</b>	2 x lateral (options see page 10)  Flange <ul style="list-style-type: none"> <li>■ DIN EN 1092-1 DN 10 ... DN 100, PN 63 ... PN 400</li> <li>■ DIN DN 10 ... DN 100, PN 64 ... PN 400</li> <li>■ ANSI B 16.5 ½" ... 4", class 600 ... 2,500</li> </ul> Weld stub ½" ... 1" Threaded bushing G / NPT ½" ... 1" Threaded nipple G / NPT ½" ... 1"
<b>Centre-to-centre distance</b>	≥ 150 ... ≤ 6,000 mm (larger distances on request)
<b>Material</b>	<ul style="list-style-type: none"> <li>■ Stainless steel 6Mo 1.4547 (UNS S31254)</li> <li>■ Stainless steel Duplex 1.4462 (UNS S31803)</li> <li>■ Stainless steel Super Duplex 1.4410 (UNS S32750)</li> </ul>
<b>Max. nominal pressure</b>	258 bar
<b>Temperature range</b>	<ul style="list-style-type: none"> <li>■ Stainless steel 6Mo 1.4547 -196 ... +450 °C</li> <li>■ Stainless steel Duplex 1.4462 -40 ... +300 °C</li> <li>■ Stainless steel Super Duplex 1.4410 -40 ... +300 °C</li> </ul>

Special versions on request

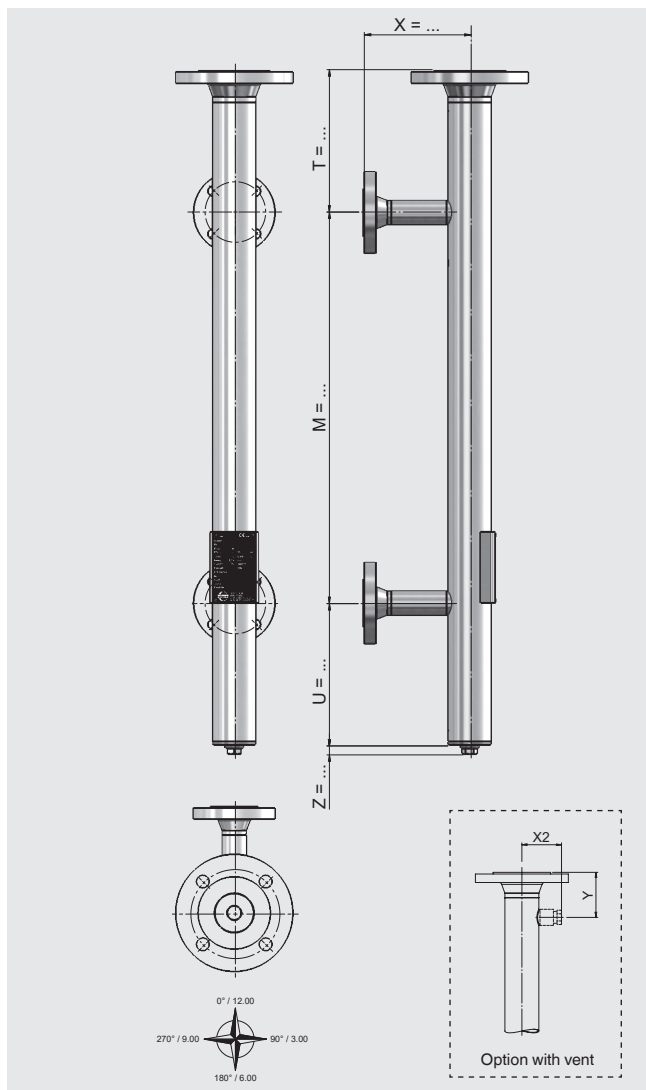
### Chamber dimensions

Dimensions in mm	Stainless steel 6Mo 1.4547 (UNS S31254)	Stainless steel Duplex 1.4462 (UNS S31803)	Stainless steel Super Duplex 1.4410 (UNS S32750)
60.3 x 2.77	x	x	x
60.3 x 3.91	x	x	x
60.3 x 5.54	x	x	x
88.9 x 3.05	x	x	x
114.3 x 3.05	x	x	x

## External chamber, special material version

### Model BZG-X

External chamber and process connections made of stainless steel / titanium / Hastelloy



Specifications	
<b>Chamber end top</b>	Flange <ul style="list-style-type: none"> <li>■ DIN EN 1092-1 DN 50 ... DN 100, PN 6 ... PN 400</li> <li>■ DIN DN 50 ... DN 100, PN 6 ... PN 400</li> <li>■ ANSI B 16.5 2" ... 4", class 150 ... 2,500</li> </ul>
<b>Chamber end bottom</b>	Flange connection or pipe cap <ul style="list-style-type: none"> <li>■ Drain plug</li> <li>■ Drain valve</li> <li>■ Drain flange</li> </ul> Options see page 9
<b>Process connections</b>	2 x lateral (options see page 10)
<ul style="list-style-type: none"> <li>■ Stainless steel 1.4306 (304L), titanium 3.7035,</li> </ul>	Flange <ul style="list-style-type: none"> <li>■ DIN EN 1092-1 DN 10 ... DN 100, PN 6 ... PN 63</li> <li>■ DIN DN 10 ... DN 100, PN 6 ... PN 64</li> <li>■ ANSI B 16.5 ½" ... 4", class 150 ... 600</li> </ul>
<ul style="list-style-type: none"> <li>■ Hastelloy C276 (2.4819)</li> </ul>	Flange <ul style="list-style-type: none"> <li>■ DIN EN 1092-1 DN 10 ... DN 100, PN 6 ... PN 160</li> <li>■ DIN DN 10 ... DN 100, PN 6 ... PN 160</li> <li>■ ANSI B 16.5 ½" ... 4", class 150 ... 900</li> </ul>
<b>Centre-to-centre distance</b>	≥ 150 ... ≤ 6,000 mm (larger distances on request)
<b>Material</b>	<ul style="list-style-type: none"> <li>■ Stainless steel 1.4306 (304L)</li> <li>■ Titanium 3.7035</li> <li>■ Hastelloy C276 (2.4819)</li> </ul>
<b>Max. nominal pressure</b>	<ul style="list-style-type: none"> <li>■ Stainless steel 1.4306 (304L) 41.4 bar</li> <li>■ Titanium 3.7035 64 bar</li> <li>■ Hastelloy C276 (2.4819) 160 bar</li> </ul>
<b>Temperature range</b>	<ul style="list-style-type: none"> <li>■ Stainless steel 1.4306 (304L) -196 ... +450 °C</li> <li>■ Titanium 3.7035 -10 ... +300 °C</li> <li>■ Hastelloy C276 (2.4819) -196 ... +500 °C</li> </ul>

Special versions on request

### Chamber dimensions

Dimensions in mm	Titanium 3.7035	Hastelloy C276 (2.4819)	Stainless steel 1.4306 (304L)
60.3 x 2	x		
60.3 x 2.77	x	x	x
60.3 x 3.91		x	
88.9 x 3.05		x	
114.3 x 3.05		x	



# Options for chamber ends

**Chamber end top (examples)**

Flange connection      Threaded connection

**Vent (examples)**

Weld stub      Vent plug G / NPT 1/2"      Flange connection

**Chamber end bottom (examples)**

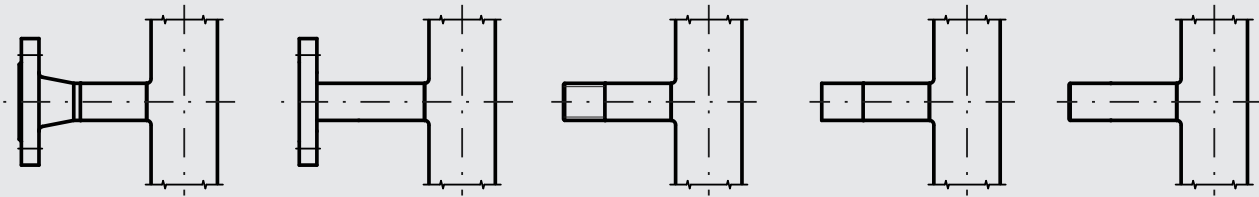
Pipe cap without drain      Pipe cap with drain plug G / NPT 1/2"      Flange connection

Pipe cap with drain flange      Pipe cap with drain valve

Other options on request

# Options for process connection

## Process connection (examples)



Welding neck flange

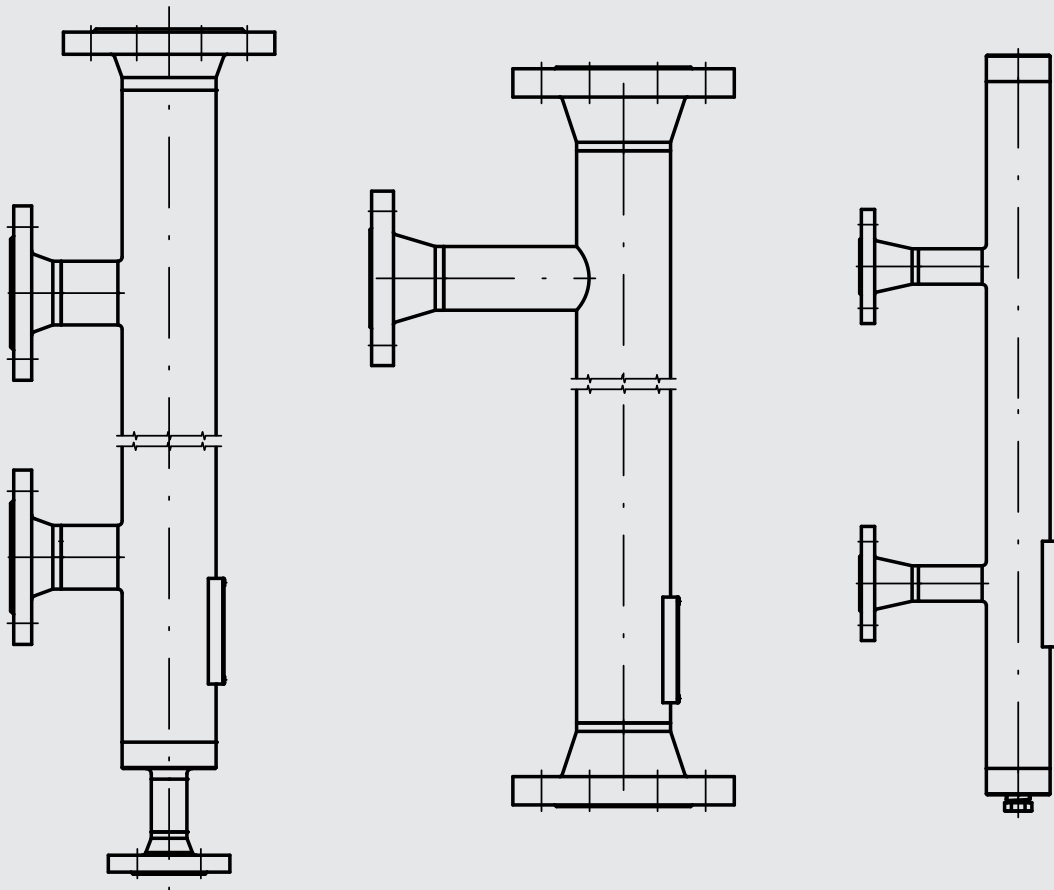
Blind flange

Threaded coupling GN ...  
(Male thread)

Threaded coupling GM ...  
(Female thread)

Weld stub S ...

## Complete instrument (examples)



Vertical flange connection (top)  
Process connections 2 x lateral  
Pipe cap with vertical drain flange (bottom)

Vertical flange connection (top)  
Process connections 1 x lateral  
Vertical flange connection (bottom)

Vertical threaded connection (top)  
Process connections 2 x lateral  
Pipe cap with vertical drain plug (bottom)

Other connections on request

## Selectable tests

- Hydrostatic pressure test
- X-ray testing (RT)
- Dye penetrant test (PT)
- Visual testing (VT)
- Positive material identification test (PMI)

Other tests on request

## Ordering information

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

Detailed information on sensors (reed chain and magnetostrictive) can be found in the following data sheets:

- Level sensor, magnetostrictive high-resolution measuring principle; model FLM; see data sheet LM 20.01
- Level sensor, with reed measuring chain; model FLR; see data sheet LM 20.02

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