



# Diaphragm seals flanged types

## Model 102/103, 202/203, 302/303 and 402/403

Flanged connections to ANSI/ASME or DIN



### Features

- Removable diaphragm seal capsule (model 102/103)
- Interchangeable components
- Removable top and bottom housing
- Variety of wetted parts materials
- Optional ATEX approved   II 2 GD c

### Pressure rating



From PN6 up to PN100  
From 150 lbs up to 1500 lbs



### Applications

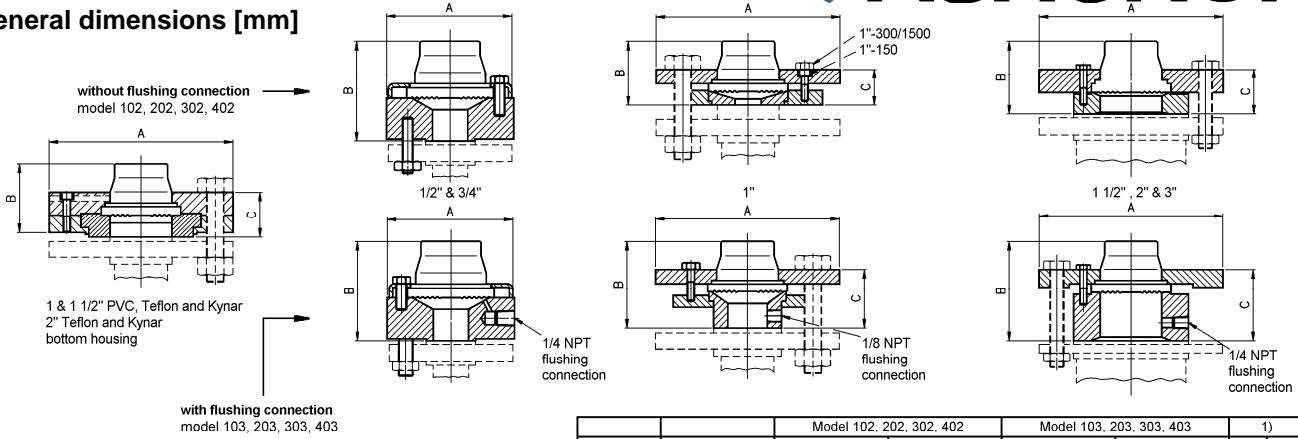
Chemical and petrochemical industry  
Machine and apparatus construction  
Pulp and paper industry

Offshore installations  
Waste water treatment

Technical specification	102	103	202	203	302	303	402	403
Process connection size, flanged	½", ¾", 1", 1 ½", 2", 3", DN15, DN25, DN40, DN50, DN80 Others on request						½", ¾", 1", 1 ½", 2", 3", DN25, DN40, DN50, DN80, others on request	
Rating	ANSI DIN 150 lbs, 300 lbs, 600 lbs, 900 lbs, 1500 lbs, PN6, PN10, PN16, PN25, PN40, PN64, PN100, others on request							
Construction	Bolted top and bottom housing, removable for easy maintenance At the side with stainless steel ball and set screw						Diaphragm, top and bottom housing welded	
Fill port	No   Yes   No   Yes   No   Yes							
Flushing connection	No   Yes   No   Yes   No   Yes							
Flushing connection size	¼ NPT female for process connection size ½", ¾", 2" and 3" 1/8 NPT female for process connection size 1", 1 ½"							
Maximum pressure	Metal bottom housing [lbs/PN] Other bottom housing [lbs/PN] 1500/100 150/10							
Measuring principle	Screwed capsule		Welded capsule or bonded diaphragm		Clamped diaphragm		Welded diaphragm to top and bottom housing	
Instrument connections (female)	ANSI/ASME ISO 228-1 ¼ NPT, ½ NPT, others on request G ¼, G ½							
Material (wetted parts)	Bottom housing Steel, stainless steel 316L (1.4404), stainless steel 304L (1.4306), Monel 400, Hastelloy C, Hastelloy B, Inconel 800, Nickel, Carpenter 20, Titanium, PVC <sup>1)3)4)</sup> , Tantalum clad stainless steel <sup>3)</sup> , Halar coated steel <sup>3)</sup> , Teflon <sup>2)3)4)</sup> <sup>1)</sup> only for process connection size 1" and 1 ½"; <sup>2)</sup> only for process connection size 1", 1 ½" and 2"; <sup>3)</sup> only for type 102/202/302; <sup>4)</sup> max. rating 150 lbs/PN10						Stainless steel 316L (1.4404), Monel 400, Hastelloy C, Titanium	
Diaphragm/capsule (metal type)	Stainless steel 316L (1.4404), Stainless steel 304L (1.4306), K-Monel, Nickel, Carpenter 20, Tantalum, Hastelloy B, Hastelloy C, Halar coated Monel, Gold plated stainless steel 304L (1.4306)						Stainless steel 316L (1.4404), K-Monel, Hastelloy C, Tantalum	
Diaphragm (other types)	Teflon, Viton, Titanium		Teflon, Viton, Titanium		Kalrez, Teflon, Viton			
Material (non wetted parts)	Top housing Nickel plated carbon steel, optional stainless steel 316L (1.4404)						Stainless steel 316L (1.4404), Monel for Monel bottom housing Titanium for Titanium bottom housing	
Clamps, rings, bolts and nuts	Steel, painted black, optional stainless steel series 300 Carbon steel, optional stainless steel series 300						Stainless steel 316 (1.4401)	
Flange								
Accuracy	Additional 0,5 % to the specified tolerance of the mounted instrument							
Conformity according to RL 94/9/EC appendix X for mechanical equipment in potential hazardous areas	Optional, marking   II 2 GD c File no. 800319037X at notified body 0032, TÜV NORD CERT The temperature class will be determined by the used measuring device.							
Limits for diaphragm/capsule material	Teflon		Viton		Kalrez		Metal	
Temperature	-40/400 °F, -40/204 °C		-40/350 °F, -40/176 °C		30/35 0 °F, 0/176 °C		depending on filling fluid	
Maximum displacement volume [cm <sup>3</sup> ]	2,23		8		8		1,14	
Filling liquids (temperature range)	Glycerin (0/400 °F, -18/204 °C), silicone (-40/600 °F, -40/315 °C), halocarbon (-70/300 °F, -56/149 °C), Syltherm 800 (-40/750 °F, -40/400 °C), vegetable oil i (32/248 °F, 0/120 °C), Neobee M-20 (0/320 °F, -17/160 °C), others on request, also depending on selected material and configuration							
Mounting	Direct or with capillary							
Weight dry [kg]	Depending on flange size							
Accessories, options	NACE, pressure gauges, pressure switches, capillaries							

All specifications are subject to change without notice.

## General dimensions [mm]



Flange Size/Rating # inch/lbs	Model 102, 202, 302, 402						Model 103, 203, 303, 403						1)	
	A		B		C		B		C		B	C		
150	300	900	150	300	900	150	300	900	150	300	900	150	150	
	600	1500		600	1500		600	1500		600	1500			
1/2"	89	95	121	75										
3/4"	98	117	130	71	76	81								
1"	100	127	152		57		35	33	40					
1 1/2"	127	159	178		61			38		76	76	76	52	
2"	152	165	216		49		35	38	54	84	84	84	60	
3"	191	206	267	51	52	68	41	47	82	79	81	94	56	
													57	
													70	

Note 1) for model 102, 202, 302 with PVC, Teflon or Kynar bottom housing

Rev. E

## Order information

Process connection	Diaphragm capsule material	Bottom housing material	Instrument connection	Rating	Flange Facing	Filling fluid	Options
<b>ANSI Flanged</b>	<b>(C)</b> 304L (1.4306) <sup>1)</sup>	<b>(B)</b> Steel <sup>1)</sup>	<b>(04T)</b> 1/2" NPT female	<b>ANSI</b>	<b>(FF)</b> Flat face <sup>1)</sup>	<b>(CG)</b> Glycerin <sup>1)</sup> (direct mounted, 0/400 F, -18/204 C)	<b>(NH)</b> Tagging wired
<b>(10)</b> 1"	<b>(D)</b> Carpenter 20 <sup>1)</sup>	<b>(BH)</b> Halar coated steel <sup>2)</sup> (temperature limit -40/300 F, -40/149 C)	<b>(02T)</b> 1/4" NPT female	<b>(150)</b> 150 lbs	(not for two pieces design)		<b>(6B)</b> Oxygen cleaned (only filled with halocarbon)
<b>(15)</b> 1 1/2"	<b>(G)</b> Hastelloy B <sup>1)</sup>	<b>(CL)</b> 304L (1.4306) <sup>1)</sup>	<b>(15T)</b> G 1/2" female <sup>1)</sup>	<b>(300)</b> 300 lbs <sup>1)</sup>	<b>(RF)</b> Raised face <sup>1)</sup>	<b>(CK)</b> Silicone (direct mounted or with capillary ≤ 10' (3 m), -40/600 F, -40/315 C)	<b>(LD)</b> Locking device
<b>(20)</b> 2"	<b>(H)</b> Hastelloy C	<b>(D)</b> Carpenter 20 <sup>1)</sup>		<b>(600)</b> 600 lbs <sup>1) 2)</sup>	<b>(RTJ)</b> Ring joint type <sup>1)</sup>	<b>(EJ)</b> Silicone (with capillary > 10' (3 m), -40/600 F, -40/315 C)	<b>(YT)</b> 316 (1.4401) stainless steel top housing (standard for ISO connections)
<b>(30)</b> 3"	<b>(K)</b> Kalrez <sup>3) 4)</sup> (temperature limit 30/350 F, 0/176 C)	<b>(G)</b> Hastelloy B <sup>1)</sup>		<b>(900)</b> 900 lbs <sup>1) 2)</sup>		<b>(CF)</b> Halocarbon (direct mounted or with capillary, -70/300 F, -56/149 C)	<b>(PU)</b> Pipe plug for flushing connection (same material as bottom housing)
<b>(50)</b> 1/2"	<b>(N)</b> Nickel <sup>1)</sup>	<b>(H)</b> Hastelloy C		<b>(1500)</b> 1500 lbs <sup>1) 2)</sup>		<b>(HA)</b> Syltherm 800 (direct mounted or with capillary, -40/750 F, -40/400 C)	<b>(1115A)</b> Stainless steel armored capillary <sup>1)</sup>
<b>(75)</b> 3/4"	<b>(P)</b> K-Monel	<b>(KY)</b> Kynar <sup>2) 3) 4)</sup>		<b>DIN</b> Nominal pressure		<b>(GZ)</b> Vegetable oil (direct mounted or with capillary, 32/248 F, 0/120 C)	<b>(1115P)</b> Stainless steel armored capillary with PVC sleeving <sup>1)</sup>
<b>DIN Flanged</b> Nominal diameter	<b>(PH)</b> Halar coated Monel <sup>6)</sup>	<b>(M)</b> Monel 400		<b>(PN6)</b>		<b>(NM)</b> Neobee M-20 (direct mounted or with capillary, 0/320 F, -17/160 C)	<b>(ATEX)</b> ATEX-listed (not for type 402/403)
<b>(DN15)</b> <sup>1)</sup>	<b>(S)</b> 316L (1.4404)	<b>(N)</b> Nickel <sup>1)</sup>		<b>(PN10)</b>			<sup>1)</sup> max. length 30 m, specify connections as per connection table and length in [mm], E. G. <b>04-1115A- 04-3000</b>
<b>(DN25)</b>	<b>(T)</b> Teflon <sup>2) 4)</sup> (temperature limit -40/400 F, -40/204 C)	<b>(SL)</b> 316L (1.4404)		<b>(PN16)</b> <sup>1)</sup>	<sup>1)</sup> the DIN-flange facing depends on nominal size and nominal pressure		
<b>(DN40)</b>	<b>(TI)</b> Titanium <sup>5)</sup>	<b>(SU)</b> Tantalum clad stainless steel <sup>2)</sup> (max. rating 300 lbs)		<b>(PN25)</b> <sup>1)</sup>			
<b>(DN50)</b> <sup>2)</sup>	<b>(U)</b> Tantalum	<b>(T)</b> Teflon <sup>2) 3) 4)</sup> (temperature limit max. 150 F, 65 C)		<b>(PN40)</b> <sup>1) 2)</sup>			
<b>(DN80)</b> <sup>1)</sup>	<b>(W)</b> 304L (1.4306) Gold plated <sup>6)</sup>	<b>(TI)</b> Titanium		<b>(PN64)</b> <sup>1) 2)</sup>			
	<b>(Y)</b> Viton <sup>2) 4)</sup> (temperature limit -40/350 F, -40/176 C)	<b>(V)</b> PVC <sup>2) 5)</sup> (max. 75 lbs, temperature limit max. 100 F, 38 C)		<b>(PN100)</b> <sup>1) 2)</sup>			
	<sup>1)</sup> not for type 402/403	<b>(W)</b> Inconel 800 <sup>1)</sup>					
	<sup>2)</sup> only type 202/203 and 302/303	<sup>1)</sup> not for type 402/403					
	<sup>3)</sup> only type 302/303	<sup>2)</sup> only for type 102/202/302					
	<sup>4)</sup> max. rating 150 lbs/PN10	<sup>3)</sup> max. rating 150 lbs/PN10					
	<sup>5)</sup> only type 202/203 and 402/403	<sup>4)</sup> only 1", 1 1/2" and 2"	<sup>1)</sup> not for type 202/203 or 402/403				
<sup>1)</sup> not for PVC and Teflon	<sup>6)</sup> only type 102/103	others on request	others on request	others on request			
<sup>2)</sup> not for PVC							

## How to order

Process connection	Type	Diaphragm capsule material	Bottom housing material	Instrument connection	Rating	Flange Facing	Filling fluid	Option
50	102	H	H	04T	150 LBS	RF	CF	NH

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