

Diaphragm seal

flange-type with diaphragm extension

Type series DB....



Application area

- Machinery construction
- Chemical and petrochemical industry
- General process technology

Features

- Flush-mounted separating diaphragm of stainless steel or special material
- Volume optimised diaphragm base
- Dead-zone free design
- Extension length 50, 100, 150, 200 mm or special lengths
- Connection to Zone 0
- System fillings for different applications
- Measuring device connection:
 - directly welded
 - directly screwed
 - with temperature decoupler
 - with capillary

Options

- Certificates
 - Material certificate acc. to EN 10204-3.1

Application

Suitable for mounting to bourdon tube pressure gauges and pressure transmitters. The flange-type diaphragm seal with diaphragm extension is suited for measuring aggressive, highly viscous media and for high process temperatures.

Technical data

Constructional design

Basic body:	Volume reduced diaphragm base Material: stainless steel mat.-no. 1.4404/1.4435 (316L)
Diaphragm:	Flat diaphragm
Material wetted parts:	Diaphragm: See order details Basic body: Stainless steel mat.-no. 1.4404/1.4435 (316L)

Process connection

Design:	Flange-type with diaphragm extension Flange connections per EN 1092-1 and ASME B 16.5, welded with the extension
Extension length (standard):	50, 100, 150, 200 mm Special lengths upon request
Nominal pressure/Nominal width:	See table

The sealing is not included in the scope of delivery.

Sealing surfaces

per:

- EN 1092-1, model B1, B2, C, D
- ASME B 16.5, RFSF, RF 125-250AA, RJF

With special material surface upon request.

Measuring device connection

See order details.
Material stainless steel mat.-no. 1.4301 (304)

System filling

See order details; further upon request.
Further details about pressure transmission fluids see general technical information TA_038.

Temperature error

In order to optimise the system we provide a detailed error calculation upon request.

Tests and certificates

Connection to Zone 0: with flame arrester,
⊕ IIG IIC according to PTB 03 ATEX 4032 X

Weight

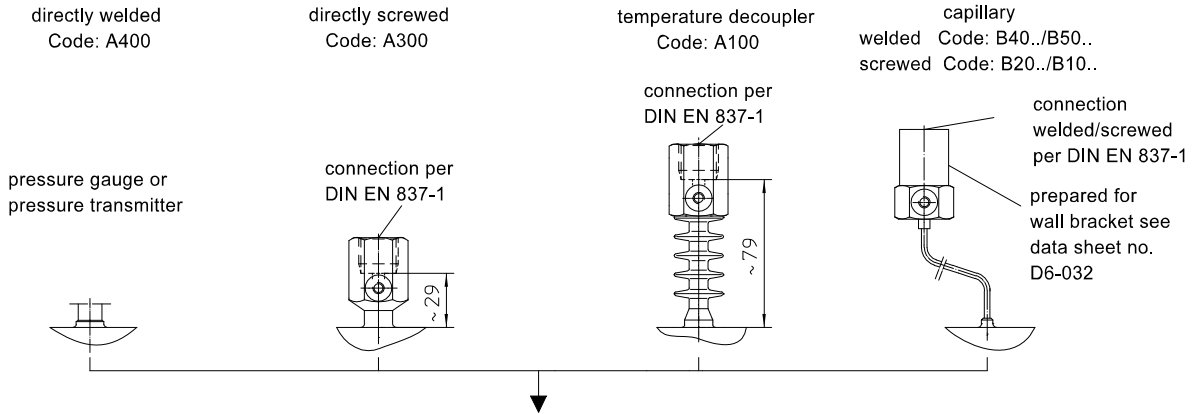
With measuring device connection G1/2:

DN 80:	approx. 6.5 kg
DN 1" (150 psi):	approx. 1.8 kg
DN 2" (300 psi):	approx. 5.1 kg

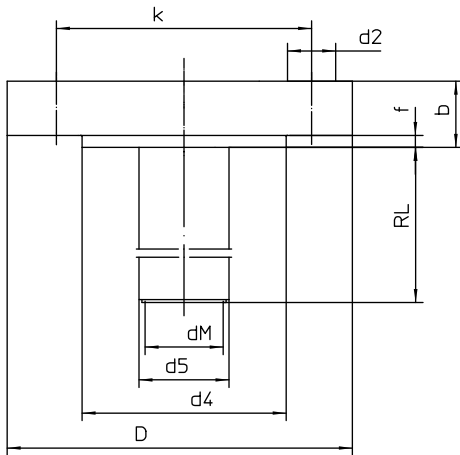
Further weights upon request.

Further information about diaphragm seals see general technical information TA_031.

Measuring device connection



Dimensions



Dimensions (mm) EN 1092-1											
DN	PN	D	dM	d4	k	d2	no. bore holes	b	f	d5	RL
50	10/40	165	40	102	125	18	4	20	2	48.3	specify with order
80	10/40	200	72	138	160	18	8	24	2	76	
100	10/16	220	86	158	180	18	8	20	2	94	
100	25/40	235	86	162	190	22	8	24	2	94	
125	10/16	250	86	188	210	18	8	22	2	125	
125	25/40	270	86	188	220	26	8	26	2	125	

Dimensions (mm) ASME B16.5											
DN	Class	D	dM	d4	k	d2	no. bore holes	b	f	d5	RL
1"	150	110	21	51	79.4	16	4	14.7	2	24.5	specify with order
1"	300	125	21	51	88.9	19	4	17.9	2	24.5	
2"	150	150	40	92	120.7	19	4	19.5	2	48.3	
2"	300	165	40	92	127	19	8	22.7	2	48.3	
3"	150	190	65	127	152.4	19	4	24.3	2	76	
3"	300	210	65	127	168.3	22	8	29	2	76	
4"	150	230	86	158	190.5	19	8	24.3	2	94	
4"	300	255	86	158	200	22	8	32.2	2	94	

Order details

Diaphragm seal flange-type with diaphragm extension

Type series DB

order details diaphragm seal DB				
DB1 . . .	design per EN 1092-1	sealing surface	model B1	
DB2 . . .			model B2 ¹	
DB4 . . .			model C	
DB3 . . .			model D	
42 .		nominal width	DN 50, PN 10-40	
62 .			DN 80, PN 10-40	
71 .			DN 100, PN 10-16	
72 .			DN 100, PN 25-40	
81 .	DN 125, PN 10-16			
82 .	DN 125, PN 25-40			
DB5 . . .	design per ASME B16.5	sealing surface	RFSF ¹	
DB51 . .			RF125-250 AA	
DB6 . . .			RJF	
12 .		nominal width	DN 1" Class 300	
32 .			DN 2" Class 300	
51 .			DN 3" Class 150	
52 .			DN 3" Class 300	
61 .			DN 4" Class 150	
62 .	DN 4" Class 300			
0	design	standard		
2		zone 0		
A400	measuring device connection	directly	welded	
A300			screwed G1/2	
A100		with temperature decoupler	screwed G1/2	
B40 . .		with capillary	welded	
B20 . .			screwed G1/2	
B50 . .		with capillary and stainless steel protective tube	welded	
B10 . .			screwed G1/2	
11		capillary length	1 m	
12			1.6 m	
13			2.5 m	
14			4 m	
21			5 m	
15	6 m			
23	7 m			
16	8 m			
17	10 m			
9	others			
1	diaphragm material	stainless steel mat.-no. 1.4404/1.4435 (316 L), standard		
3		Hastelloy C276		
8		Hastelloy C4		
F1	extension length	RL = 50 mm		
F2		RL = 100 mm		
F3		RL = 150 mm		
F4		RL = 200 mm		
F9		RL (mm): special length		
K1	material sealing surface / extension	stainless steel mat.-no. 1.4404 (316L) /1.4571 (316Ti), standard		
K3		Hastelloy C276		
K8		Hastelloy C4		
K9		variant upon request		
L22	system filling ²	<u>pressure transmission fluid</u>	<u>temperature range</u> ³	
L23		synthetic oil, free of silicone FD1, standard	-10...140 °C	
L31		synthetic oil, free of silicone FD1, pls. specify max. temperature	-50...230 °C	
L31		high temperature oil FV3H	-10...400 °C	

Additional features (to be indicated in case of need, only)	
W1020	material certificate per EN 10204-3.1, wetted parts

Order code (example): DB1420 - A4001 - F1 - K1 - L22 - ...

¹ necessary in case of special materials. Diaphragms made of special materials cover the complete sealing surface area. The use of metallic seals is not permissible in this case. The maximum pressure level then depends on the design and properties of the sealing material.

² for more detailed information about pressure transmission fluids see TA_038. Please state temperature range to allow an accurate calculation of the system.

³ max. media temperature for pressure > 0 bar rel.