Diaphragm seal for high pressure applications

welded design with screw-in tread

Type series DD8050

Application area

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

Features

- Completely welded design
- Suitable for pressure up to 1050 bar
- Volume optimised diaphragm base
- Process connection G1/2 B, G1/4 B, 1/2" NPT and 9/16-18 UNF female
- System fillings for different applications
- Measuring device connection:
  - directly welded
  - directly screwed
  - with temperature decoupler
  - with capillary

Options

- Gold coating of sensor diaphragm (thickness 6 µm)
- Labom REconnect quick coupling device for easy and safe separation and connection of diaphragm seal systems. Available with a wide range of pressure gauges and pressure transmitters; Type series MK1000, see data sheet D6-022
- Oxygen free of oil and grease
- Material certificate acc. to EN 10204-3.1
- Certificate for hydrogen resistance per EN 10204-3.1

Application

Suitable for mounting to bourdon tube pressure gauges and pressure transmitters. The diaphragm seal welded design is suited for measuring aggressive media and for high process temperatures.

Especially for use in hydrogen applications a calculation tool is available with which it can be determined on the basis of the available process data whether gold plating of the diaphragm is necessary.

Technical data

Constructional design

Variants:

- Pressure range up to 60 bar overload protected up to 90 bar process temperatures -40...200 °C
- Pressure range up to 400 bar overload protected up to 400 bar process temperatures -40...180 °C
- Pressure range up to 600 bar overload protected up to 900 bar process temperatures -40...100 °C
- Pressure range up to 1050 bar overload protected up to 1050 bar process temperatures -40...100 °C

Diaphragm: Flat diaphragm

Material wetted parts:

Diaphragm:
Stainless steel mat.-no. 1.4435 (316L), alternative Hastelloy C276

Process connection:
Stainless steel mat.-no. 1.4404/1.4435 (316L)

Further materials upon request.

Process connection

Design	60 bar	400 bar	600 bar	1050 bar
G 1/2 B	X	X	X	-
G 1/4 B	X	X	-	-
1/2" NPT	X	X	X	-
9/16-18 UNF	-	-	X	X

Sealing are not included in the scope of delivery.

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.

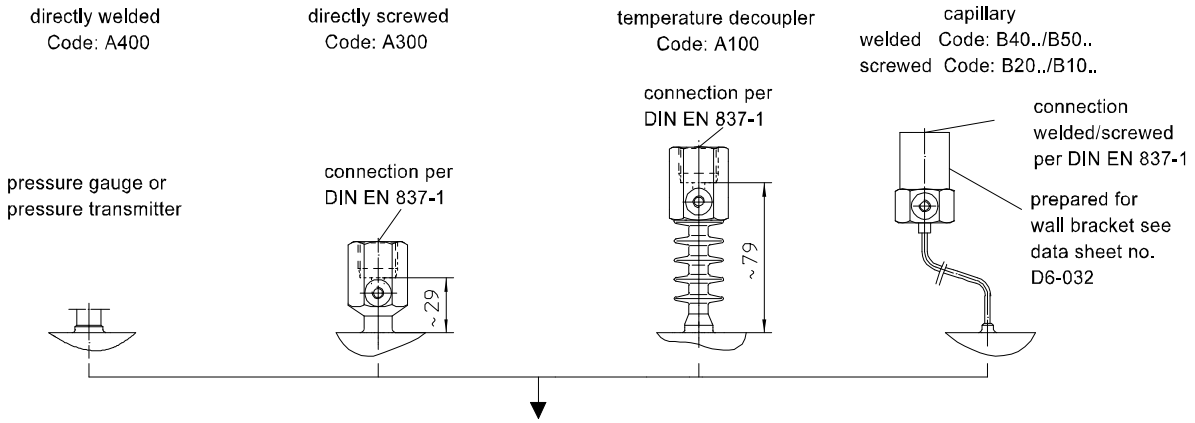
Weight

Without measuring device connection approx. 400 g.

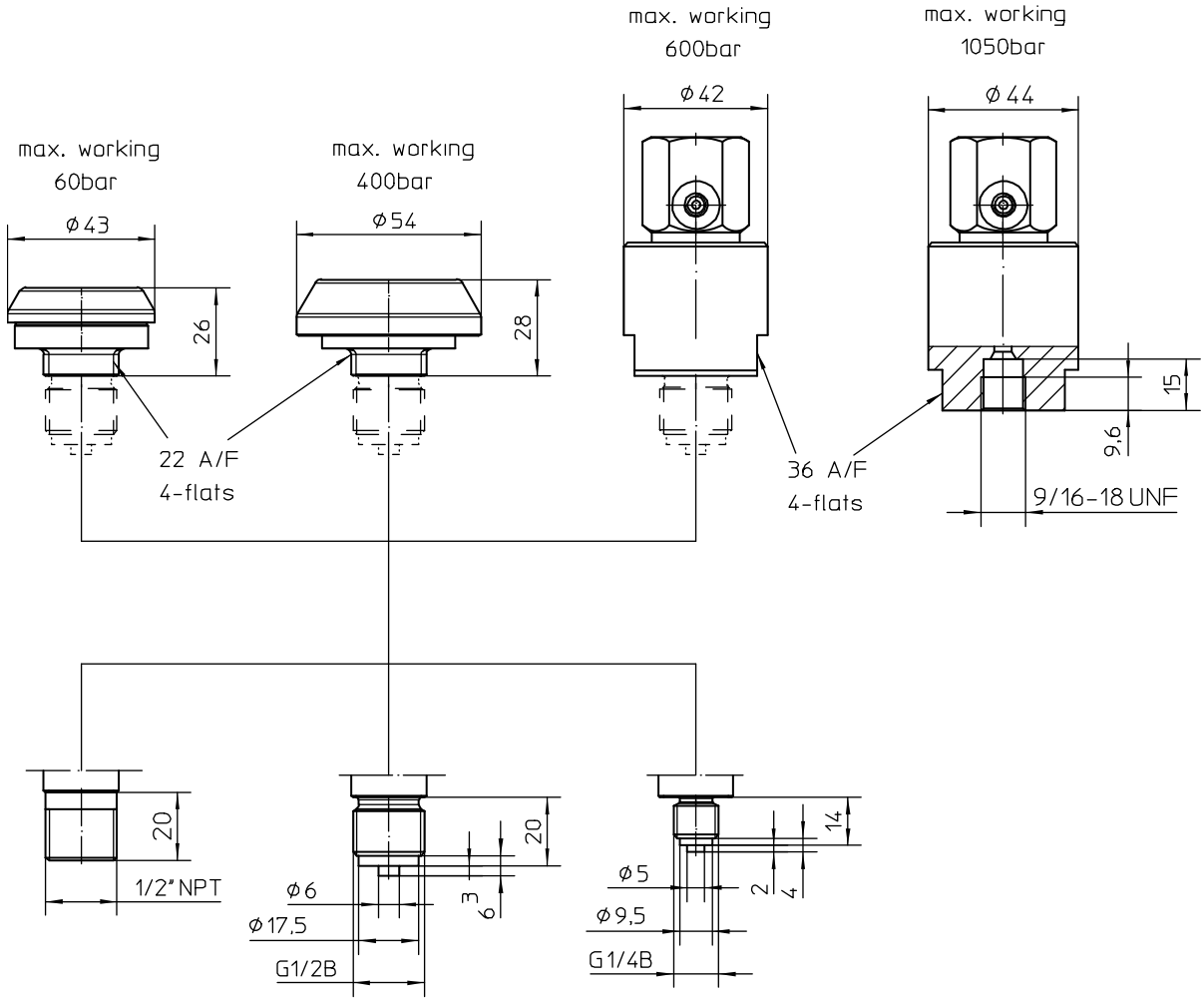
Further information about diaphragm seals see general technical information TA_031.

Flame arrester MF21xx for connection of measuring devices to zone 0 see data sheet D6-025.

Measuring device connection



Dimensions



Order details

Diaphragm seal for high pressure applications, welded design
Type series DD8050

Order details diaphragm seal DD8050			
DD8050	Diaphragm seal for high pressure applications, welded design		
D3 . .	pressure range	60 bar	for process temperature -40...200 °C
D4		400 bar	for process temperature -40...180 °C
D6		600 bar 1	for process temperature -40...100 °C
D7 . .		1050 bar 1	for process temperature -40...100 °C
10	process connection	G1/2 B	
14		G1/4 B	
51		1/2" NPT	
80		9/16-18 UNF female	
E1	material	process connection and basic body stainless steel mat.-no. 1.4404/1.4435 (316L)	
G7		diaphragm	stainless steel mat.-no. 1.4435 (316L)
G3			Hastelloy C 276 2
A400	measuring device connection	directly	welded
A300			screwed G1/2
A303			screwed G1/4 per DIN EN ISO 1179-1 1
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
	system filling [3]	pressure transmission fluid	temperature range[4]
L22		synthetic oil, free of silicone FD1, standard	-10…140 °C
L23		synthetic oil, free of silicone FD1, pls. specify max. temperature	-40…230 °C
L15		glycerine/water FGW	-30...110 °C

Additional features (to be indicated in case of need, only)	
J304	gold coating of sensor diaphragm (thickness 6 µm), for hydrogen applications
W1020	material certificate per EN 10204-3.1, wetted parts
W1251	certificate per EN 10204-3.1, for hydrogen resistance
W4001	Oxygen free of oil and grease

Order code (example): DD8050 - D310 - E1 - G7 - A400 - L22 - ...

[1] Pressure ranges 600 bar and 1050 bar only possible with measuring device connection A303
[2] Not possible with gold coating
[3] For more detailed information about pressure transmission fluids see TA_038. Please state temperature range to allow an accurate calculation of the system.
[4] Max. media temperature for pressures > 0 bar rel.