

# flanged diaphragm seal

## Type 04.3A0 - 04.3B0

metallic seal **04.3A0**  
gasket seal **04.3B0**



Diaphragm seals are designed to isolate the sensing element of pressure gauges and pressure switches from process fluids which may be corrosive, viscous, sedimentous and/or with a high temperature and pressure. An elastic diaphragm, mechanically clamped, fitted to a leak proof check, guarantees the separation of the process fluid from the transmission fill fluid. The mechanical sealing of the diaphragm on type 3A0 guarantees the application of the system at high process fluid temperature avoiding the problems caused by gaskets.

### 3A0-Functional and constructive characteristics

**Ranges:** 0...60/0...250 bar.

**Process temperature:** -45°C...+150°C.

**Accuracy\*:** (add to instrument accuracy)  $\pm 0,5\%$  for direct mounting;  $\pm 1\%$  for capillary mounting.

**Instrument connection:** AISI 304 st.st., 1/2" BSP F.

**Diaphragm:** AISI 316L st.st., metallic seal.

**Process connection:** AISI 316 st.st., DN 15...40, PN 40...160 UNI-DIN step seal; 1/2" ...1" 1/2, 600...2500 RF as per ANSI B16.5.

**Filling liquid:** silicone oil type "A".

**Fixing bolts:** AISI 304 st.st.

**Capillary (remote mounting):** AISI 304 st.st.  $\varnothing 3 \times 1$  or AISI 304 st.st. covered with AISI 304 st. st. armour  $\varnothing 6$  (max. length 6 mt.).

### Special versions

**Instrument connection:** AISI 316 st.st., 1/2" BSP F.

**Diaphragm:** Monel 400, Hastelloy C276, Hastelloy B2, Tantalum.

**Process connection material:** Carbon steel, Hastelloy B2, Hastelloy C276, Monel 400.

**Process connection:** with special flange finishing (see table FLANGE SHAPE AND FINISHING).

**Filling liquids:** special filling liquids are available for special process conditions (see table FILLING LIQUIDS).

**Capillary (remote mounting):** AISI 316 st.st. covered with AISI 304 st. st. armour  $\varnothing 6$ ; AISI 304 st.st. covered with AISI 304 st. st. armour  $\varnothing 6$ , PVC coated.

### 3B0-Functional and constructive characteristics

**Ranges:** -1...0/0...40 bar.

**Process temperature:** -45°C...+150°C.

**Accuracy\*:** (add to instrument accuracy)  $\pm 0,5\%$  for direct mounting;  $\pm 1\%$  for capillary mounting.

**Instrument connection:** AISI 316 st.st., 1/2" BSP F.

**Diaphragm:** AISI 316L st.st., PTFE gasket.

**Process connection:** AISI 316 st.st., DN 15...50, PN 6...40 UNI-DIN step seal; 1/2" ...2", 150...600 RF as per ANSI B16.5.

**Filling liquid:** silicone oil type "A".

**Fixing bolts:** AISI 304 st.st.

**Capillary (remote mounting):** AISI 304 st.st.  $\varnothing 3 \times 1$  or AISI 304 st.st. covered with AISI 304 st. st. armour  $\varnothing 6$  (max. length 6 mt.).

### Special versions

**High temperature version:** (option E10) with BUNA S gasket and silicone oil type "C".

**Diaphragm:** Monel 400, Nickel, Hastelloy C276, Hastelloy B2, Tantalum, Titanium and AISI 316L st.st. PTFE coated (1).

**Process connection material:** Carbon steel, AISI 316 st.st. or Carbon steel PTFE coated (1), Hastelloy B2, Hastelloy C276, Monel 400.

**Process connection:** with special flange finishing (see table FLANGE SHAPE AND FINISHING).

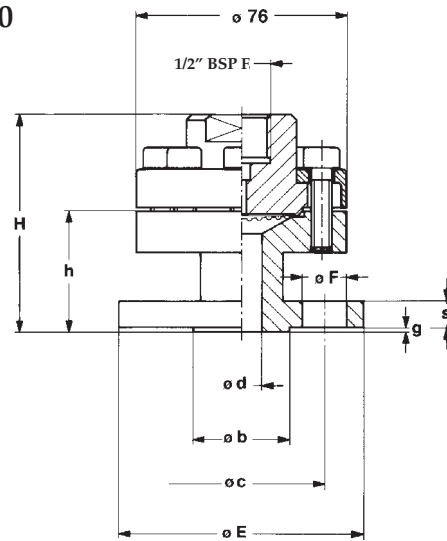
**Filling liquids:** special filling liquids are available for special process conditions (see table FILLING LIQUIDS).

**Capillary (remote mounting):** AISI 316 st.st. covered with AISI 304 st. st. armour  $\varnothing 6$ ; AISI 304 st.st. covered with AISI 304 st. st. armour  $\varnothing 6$ , PVC coated.

\* at 20 °C process temperature  
(or state temperature when ordering)

(1) max. temperature 150 °C/328 °F, with PTFE coating.

## DIAPHRAGM SEAL TYPE 3A0



## FLANGED CONNECTION AS PER UNI - DIN : DIMENSIONS (mm.) - dimensions as per DIN, in brackets

DN	PN-bar (1)	Code	h	H	E	b	d	g	c	s	F	N (2)
15	25...40	OSG	47	82,5	95	45	15	2	65	14	14	4
15	64...100	OUG	51	86,5	105	45	15	2	75	18	14	4
15	160	OZG	51	86,5	105	45	15	2	75	18	14	4
20	25...40	PSG	49	84,5	105	58	20	2	75	16	14	4
20	64...100	PUG	57	92,5	130	58	20	2	90	20	18	4
20	160	PZG	57	92,5	130	58	20	2	90	20	18	4
25	25...40	QSG	49	84,5	115	68	25	2	85	16	14	4
25	64...100	QUG	59	94,5	140	65 (68)	25	2	100	22	18	4
25	160	QZG	59	94,5	140	65 (68)	25	2	100	22	18	4
40	25...40	SSG	33	68,5	150	88	40	2	110	15	18	4
40	64...100	SUG	41	76,5	170	85 (88)	40	2	125	23	22	4
40	160	SZG	43	78,5	170	85 (88)	40	2	125	25	22	4

1) suitable for 150% of flange rating at 20...30 °C and 100% of flange rating at 340 °C.

2) N° holes.

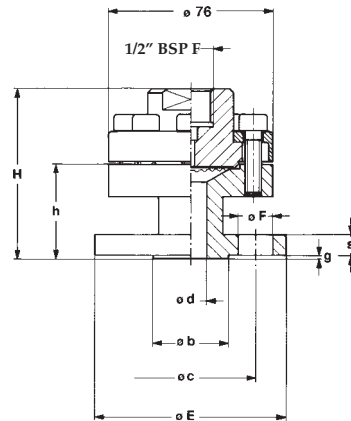
## FLANGED CONNECTION AS PER ANSI : DIMENSIONS (mm.)

DN	PN-PSI (1)	Code	h	H	E	b	d	g	c	s	F	N (2)
1/2"	600	4DA	53,8	89,3	95	34,9	15	6,3	66,7	14,5	16	4
1/2"	900	4EA	68,8	104,3	120,5	34,9	15	6,3	82,5	22,5	22	4
1/2"	1500	4FA	68,8	104,3	120,5	34,9	15	6,3	82,5	22,5	22	4
1/2"	2500	4GA	76,8	112,3	133,5	34,9	15	6,3	88,9	30,5	22	4
3/4"	600	5DA	59,3	94,8	117,5	42,9	20	6,3	82,5	16	19	4
3/4"	900	5EA	71,8	107,3	130	42,9	20	6,3	88,9	25,5	22	4
3/4"	1500	5FA	71,8	107,3	130	42,9	20	6,3	88,9	25,5	22	4
3/4"	2500	5GA	78,3	113,8	139,5	42,9	20	6,3	95,2	32	22	4
1"	600	6DA	60,8	96,3	124	50,8	25	6,3	88,9	17,5	19	4
1"	900	6EA	78,8	114,3	149	50,8	25	6,3	101,6	28,5	26	4
1"	1500	6FA	78,8	114,3	149	50,8	25	6,3	101,6	28,5	26	4
1"	2500	6GA	85,3	120,8	158,5	50,8	25	6,3	107,9	35	26	4
1" 1/2"	600	7DA	43,8	79,3	155,5	73	40	6,3	114,3	22,5	22	4
1" 1/2"	900	7EA	53,3	88,8	178	73	40	6,3	123,8	32	29	4
1" 1/2"	1500	7FA	53,3	88,8	178	73	40	6,3	123,8	32	29	4
1" 1/2"	2500	7GA	65,8	101,3	203	73	40	6,3	146	44,5	32	4

1) suitable for 150% of flange rating at 20...30 °C and 100% of flange rating at 340 °C.

2) N° holes.

## DIAPHRAGM SEAL TYPE 3B0



## FLANGED CONNECTION AS PER UNI - DIN : DIMENSIONS (mm.)

DN	PN-bar (1)	Code	h	H	E	b	d	g	c	s	F	N (2)
15	6	OOG	46	71	80	40	15	2	55	10	11	4
15	10÷16	OQG	50	75	95	45	15	2	65	12	14	4
15	25÷40	OSG	52	77	95	45	15	2	65	14	14	4
20	6	POG	48	73	90	50	20	2	65	12	11	4
20	10÷16	PQG	52	77	105	58	20	2	75	14	14	4
20	25÷40	PSG	54	79	105	58	20	2	75	16	14	4
25	6	QOG	48	73	100	60	25	2	75	12	11	4
25	10÷16	QQG	52	77	115	68	25	2	85	14	14	4
25	25÷40	QSG	54	79	115	68	25	2	85	16	14	4
40	6	SOG	50	75	130	80	40	3	100	11	14	4
40	10÷16	SQG	56	81	150	88	40	3	110	13	18	4
40	25÷40	SSG	58	83	150	88	40	3	110	15	18	4
50	6	TOG	50	75	140	90	50	3	110	11	14	4
50	10÷16	TQG	58	83	165	102	50	3	125	15	18	4
50	25÷40	TSG	60	85	165	102	50	3	125	17	18	4

1) suitable for 150% of flange rating at 20...30 °C and 100% of flange rating at 340 °C.

2) N° holes.

## FLANGED CONNECTION AS PER ANSI : DIMENSIONS (mm.)

DN	PN-psi (1)	Code	h	H	E	b	d	g	c	s	F	N (2)
1/2"	150	4AA	48,1	73,1	89	34,9	15	1,6	60,3	10	16	4
1/2"	300	4BA	53,6	78,6	95	34,9	15	1,6	66,7	13	16	4
1/2"	600	4DA	59,8	84,8	95	34,9	15	6,3	66,7	14,5	16	4
3/4"	150	5AA	49,6	74,6	98,5	42,9	20	1,6	69,8	11,5	16	4
3/4"	300	5BA	57,1	82,1	117,5	42,9	20	1,6	82,5	14,5	19	4
3/4"	600	5DA	63,3	88,3	117,5	42,9	20	6,3	82,5	16	19	4
1"	150	6AA	51,1	76,1	108	50,8	25	1,6	79,4	13	16	4
1"	300	6BA	60,1	85,1	124	50,8	25	1,6	88,9	16	19	4
1"	600	6DA	66,3	91,3	124	50,8	25	6,3	88,9	17,5	19	4
1" 1/2	150	7AA	53	78	127	73	40	1,6	98,4	15,9	16	4
1" 1/2	300	7BA	65,1	90,1	155,5	73	40	1,6	114,3	19	22	4
1" 1/2	600	7DA	73,3	98,3	155,5	73	40	6,3	114,3	22,5	22	4
2"	150	BAA	55,6	80,6	152,5	92,1	50	1,6	120,6	17,5	19	4
2"	300	BBA	60	85	165	92,1	50	1,6	127	20,9	19	8
2"	600	BDA	69,3	94,3	165	92,1	50	6,3	127	25,5	19	8

1) suitable for 150% of flange rating at 20...30 °C and 100% of flange rating at 340 °C.

2) N° holes.

flanged diaphragm seal  
Type 04.3A0 - 04.3B0

metallic seal

04.3A0

gasket seal

04.3B0

## FLANGE SHAPE AND FINISHING

Code	Form UNI	Finishing (turning made)	Code	Form DIN	Finishing (turning made)	Code	Form ANSI B16.5	Finishing
LM1	2225 SM	Ra 3,2 µm max	LM2	2513 V13	Rz 63 µm max	LM3	LM	AARH 125÷250 µin (grooves)
LF1	2225 SF	Ra 3,2 µm max	LF2	2513 R13	Rz 63 µm max	LF3	LF	AARH 125÷250 µin (grooves)
LT1	2226 DM	Ra 3,2 µm max	LT2	2512 F	Rz 40 µm max	LT3	LT	AARH 125 µin max (turning made)
LG1	2226 DF	Ra 3,2 µm max	LG2	2512 N	Rz 40 µm max	LG3	LG	AARH 125 µin max (turning made)
CM1	2227 CM	Ra 12,5 µm max	CM2	2514 V	Rz 160 µm max	ST3	ST	AARH 125 µin max (turning made)
CF1	2227 CF	Ra 12,5 µm max	CF2	2514 R	Rz 160 µm max	SG3	SG	AARH 125 µin max (turning made)
LN1	6078	Ra 0,8 µm max	LN2	2696 L	Rz 4 µm max	RJ3	RJ	AARH 63 µin max (turning made)
FF1	2229 piana	Ra 12,5 µm max	FF2	2526 A/B	Rz 40÷160 µm	FF3	FF	AARH 125÷250 µin (grooves)
RF1	2229 gradino	Ra 12,5 µm max	RF2	2526 C	Rz 40÷160 µm	RF3	RF	AARH 125÷250 µin (grooves)
			RF4	2526 D	Rz 40 µm max	SM3	SM	AARH 125 µin max (turning made)
			RF5	2526 E	Rz 16 µm max	SF3	SF	AARH 125 µin max (turning made)
						RFS	RF (smooth)	AARH 125 µin max (turning made)
						RF6	Stock	AARH 500 µin max (grooves)

## FILLING LIQUIDS

Liquid type	Limit of process temperature
Silicone oil type "A"	-45 ... +150 °C
Silicone oil type "B"	-20 ... +250 °C
Silicone oil type "C"	+20 ... +340 °C
"Fluorolube"	-60 ... +150 °C

	□□□	□□	□				
Ra (µm)	0,8	1,6	3,2	6,3	12,5	25	50
Rz (µm)	3,2	6,3	12,5	25	50	100	200
AARH (µin)	32	63	125	250	500	1000	2000

## HOW TO ORDER

	CODE & DESCRIPTION
04	04 - diaphragm seals
3B0	3A0 - flanged connection, high pressure 3B0 - flanged connection
4	Process connection material 3 - Carbon steel 4 - AISI 316 st.st. 8 - Carbon steel + PTFE N - AISI 316 st.st. + PTFE 6 - MONEL 400 1 - HASTELLOY B 2 9 - HASTELLOY C 276
6	Diaphragm material 4 - AISI 316 L st.st. 8 - AISI 316 L st.st. + PTFE 7 - NICKEL 6 - MONEL 400 9 - HASTELLOY C276 1 - HASTELLOY B2 2 - TITANIO B - TANTALIO
4AA	Process connection see tables to code
41F	Instrument connection 41F - 1/2" BSP F
1	Capillary type 0 - without capillary see capillary type table
1000	capillary length mm.
R15	see options table

## CAPILLARY TYPE - max. length 6 mt.

CAPILLARY TYPE	CODE
AISI 304 st.st.	1
AISI 316 st.st. covered with AISI 304 st.st. armour	4
AISI 316 st.st. covered with AISI 304 st.st. armour, PVC coated	5
AISI 304 st.st. covered with AISI 304 st.st. armour	9

N.B. - All diaphragm seals are mounted on the instruments and fixed by an aluminium protection label. For applications with capillary: should diaphragm seal and instrument not be at a same level, instrument on installation is required. (For use and installation, see data sheet "04").

## OPTIONS

Description	Cod.	3A0	3B0
AISI 316 st.st. intermediate ring	AI4		◆
AISI 316 st.st. intermediate ring with PTFE coating	AIN		◆
AISI 316 st.st.int.ring + flushing conn. 1/4" NPT	AT4		◆
High temperature version 340°C	E10		◆
NACE MR01.75 version (1)	E30	◆	◆
"Fluorolube" filling	R15	◆	◆
AISI 316 adaptor 1/2" BSP M/F	R20	◆	◆
AISI 316 adaptor 1/2" BSP M x 1/4" NPT M	R21	◆	◆
Without instrument, alone	S20	◆	◆

(1) MONEL 400 diaphragm only.



**DRUCK & TEMPERATUR Leitenberger GmbH**  
Postfach 64 • D-72136 Kirchentellinsfurt • Germany  
Tel.: 0 71 21 - 9 09 20 - 0 • Fax: 0 71 21 - 9 09 20 - 99  
E-Mail: dt-info@leitenberger.de  
INTERNET-Site: http://www.leitenberger.de