

DATA SHEET

USF – INTERNAL DIAPHRAGM, FLANGED TYPE

The USF construction is designed for those applications where the existing process connection is too small to use a flush diaphragm seal. The USF consists of an upper and lower housing, the upper is the actual seal part with a diaphragm size that allows for measurement of relatively low ranges (200 mbar 2 seals attached (dP); 800 mbar single seal attached). The lower housing creates the transition from the diaphragm size to the actual small process connection. USF is typically used in combination with (differential) pressure transmitters for applications such as level, flow and pressure measurement; also the USF is often combined with pressure gauges.



STANDARD EXECUTION

DIAPHRAGM	BODY	MOUNTING CONNECTION	
AISI316(L)	AISI316(L)	top (axial)	
FACING	FACING TYPE	GASKET	BOLTS
RF	B1	PTFE	3/8" UNF – A2-70

FLANGED PROCESS CONNECTIONS

ASME B16.5			EN 1092-1		
size	rating	dD	size	rating	dD
1/2"	cl. 150 – cl. 1500	51mm	DN15	PN10 – PN100	51mm
1"	cl. 150 – cl. 1500	51mm	DN25	PN10 – PN100	51mm
1.5"	cl. 150 – cl. 1500	51mm	DN40	PN10 – PN100	51mm
2"	cl. 150 – cl. 1500	51mm	DN50	PN10 – PN100	51mm
3"	cl. 150 – cl. 1500	51mm	DN80	PN10 – PN100	51mm

UPPER AND LOWER PART ASSEMBLY

BOLTING						GASKET	
thread	material	mwp	pcs	rating (ASME)	rating (EN)	material	temperatuur range
3/8" UNF	A2-70	125 bar	4	cl. 150 - cl. 600	PN10 – PN100	PTFE	-190 / +200°C
3/8" UNF	A2-70	250 bar	8	cl. 900 - cl. 1500	-	Garfite	-40 / 480°C
3/8" UNF	8.8	150 bar	4	cl. 150 - cl. 600	PN10 – PN100	Camprofile	-200 / 500°C
3/8" UNF	8.8	300 bar	8	cl. 900 - cl. 1500	-		

Note: mwp (maximum working pressure) at 20 °C with 316L body material

WETTED PARTS, BODY MATERIALS, AND FACING OPTIONS

diaphragm mat.	body material	lowerpart material	facing (ASME B16.5)	facing type (EN 1092-1)
AISI 316(L)	AISI 316(L)	AISI 316(L)	RF Ra 3.2-6.3 µm	B1 Ra 3.2-12.5 µm
AISI 304			RJF Ra <1.6 µm	A Ra 3.2-12.5 µm
AISI 321			LMF Ra 3.2-6.3 µm	B2 Ra 0.8-3.2 µm
Hastelloy C-276			SMF Ra <3.2 µm	C Ra 0.8-3.2 µm
Hastelloy C-276	AISI 316(L)	Hastelloy C-276	FF Ra 3.2-6.3 µm	D Ra 0.8-3.2 µm
Monel 400	AISI 316(L)	Monel 400	LTF Ra <3.2 µm	E Ra 3.2-12.5 µm
Tantalum	AISI 316(L)	Tantalum*	STF Ra <3.2 µm	F Ra 3.2-12.5 µm
Nickel 201	AISI 316(L)	Nickel 201	LGF Ra <3.2 µm	G Ra 0.8-3.2 µm
Duplex 2205	AISI 316(L)	Duplex	SGF Ra <3.2 µm	H Ra 0.8-3.2 µm
Inconel 600	AISI 316(L)	Inconel 600	LFF Ra 3.2-6.3 µm	
Titanium Gr.1	Titanium Gr.2	Titanium Gr.2	SFF Ra <3.2 µm	

*Note: material AISI316(L) with tantalum treatment

COATING AND OTHER OPTIONS

COATING UPPERPART

Gold 24 Kt hydrogen permeation protection
PTFE, ECTFE for anti-stick purpose only

COATING/LINING LOWERPART

Tantalum wetted parts
PTFE lining

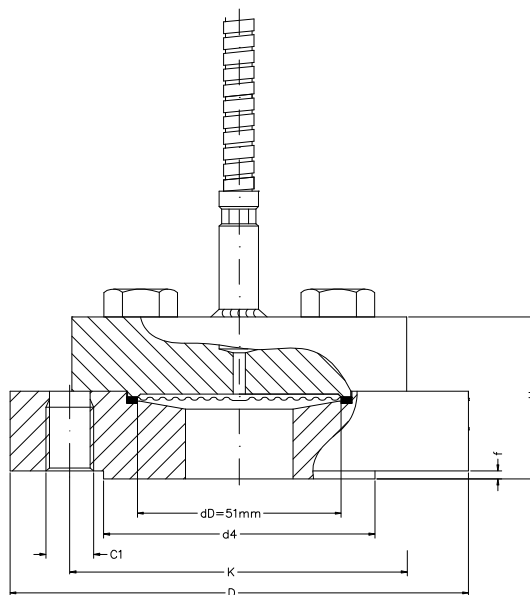
OTHER OPTIONS

heavy duty capillary tube - full welded
temperature reducer system TR
PTFE sheet for anti-stick purpose only
flushing port in lowerpart
degreasing of wetted parts

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USF – INTERNAL DIAPHRAGM, FLANGED TYPE

DRAWING AND DIMENSIONS STANDARD EXECUTIONS



ASME B16.5 - RF FACING

size	rating	facing	dD	D	f	d4	K	H	C1 / pcs
1/2"	cl. 150	RF	51	89	2	35	61	50	1/2" 13 UNC / 4x
1/2"	cl. 300	RF	51	95	2	35	67	52	1/2" 13 UNC / 4x
1/2"	cl. 400-600	RF	51	95	7	35	67	57	1/2" 13 UNC / 4x
1/2"	cl. 900-1500	RF	51	120	7	35	83	56	3/4" 10 UNC / 4x
1"	cl. 150	RF	51	110	2	51	79	42	1/2" 13 UNC / 4x
1"	cl. 300	RF	51	125	2	51	89	47	5/8" 11 UNC / 4x
1"	cl. 400-600	RF	51	125	7	51	89	52	5/8" 11 UNC / 4x
1"	cl. 900-1500	RF	51	150	7	51	102	60	7/8" 9 UNC / 4x
1,5"	cl. 150	RF	51	125	2	73	98	42	1/2" 13 UNC / 4x
1,5"	cl. 300	RF	51	155	2	73	114	53	3/4" 10 UNC / 4x
1,5"	cl. 400-600	RF	51	155	7	73	114	56	3/4" 10 UNC / 4x
1,5"	cl. 900-1500	RF	51	180	7	73	124	56	1 1/8" 7 UNC / 4x
2"	cl. 150	RF	51	150	2	92	121	39	19mm / 4x
2"	cl. 300	RF	51	165	2	92	127	42	19mm / 8x
2"	cl. 400-600	RF	51	165	7	92	127	52	19mm / 8x
2"	cl. 900-1500	RF	51	215	7	92	165	58	25mm / 8x
3"	cl. 150	RF	51	190	2	127	152	46	19mm / 4x
3"	cl. 300	RF	51	210	2	127	168	51	22mm / 8x
3"	cl. 400-600	RF	51	210	7	127	168	58	22mm / 8x
3"	cl. 900	RF	51	240	7	127	191	65	25mm / 8x
3"	cl. 1500	RF	51	265	7	127	203	75	32mm / 8x

All dimensions in mm

EN 1092-1 - TYPE B1

size	rating	type	dD	D	f	d4	K	H	C1 / pcs
DN15	PN10-40	B1	51	95	2	45	65	52	M12 / 4x
DN15	PN63	B1	51	105	2	45	70	49	M12 / 4x
DN15	PN100	B1	51	105	2	45	70	49	M12 / 4x
DN25	PN10-40	B1	51	115	2	88	110	44	M12 / 4x
DN25	PN63	B1	51	140	2	88	125	55	M16 / 4x
DN25	PN100	B1	51	140	2	88	125	55	M16 / 4x
DN40	PN10-40	B1	51	150	3	102	125	44	M16 / 4x
DN40	PN63	B1	51	170	3	102	135	46	M20 / 4x
DN40	PN100	B1	51	170	3	102	145	46	M20 / 4x
DN50	PN10-40	B1	51	165	3	138	160	50	M16 / 4x
DN50	PN63	B1	51	180	3	138	170	50	M20 / 4x
DN50	PN100	B1	51	195	3	138	180	48	M24 / 4x
DN80	PN10-40	B1	51	200	3	158	180	44	18mm / 4x
DN80	PN63	B1	51	215	3	162	190	50	22mm / 8x
DN80	PN100	B1	51	230	3	162	200	56	26mm / 8x

All dimensions in mm



Holland – United Kingdom – Romania – India – Thailand – Dubai – USA

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