

chemical seal USL internal diaphragm, low pressure threaded type

typical "USL" seal applications

- to combine with industrial process transmitters.
- to combine with mechanical pressure gauges.
- to combine with pressure switches.

technical specification model USL



Threaded connection NPT (male or female) BSP (male or female)	1/2"	3/4"	1"	
Diaphragm size in mm	89	89	89	
Max. process pressure in bar at 20 °C	100	100	100	8 bolts A2-70
Max. capillary length in meter	15	15	15	
Min. pressure range for PI in bar	0.6	0.6	0.6	
Min. span for GP & AP in mbar	80	80	80	
Min. span for DP in mbar	10	10	10	

Process connection	Standard	Options
Threaded according ANSI / DIN / EN / JIS	1/2" / 3/4" / 1" NPT / BSP Male / female	Other sizes mm / SAE and others
Bolting		
M10	8 x A2-70 max 100 bar at 20 °C	

Wetted parts	Standard	Options
Upperflange	AISI316 (L)	Exotic materials
Lowerflange	AISI316 (L)	Exotic materials
Diaphragm	AISI316L	Hastelloy B2, Monel, Tantalum, Titanium Inconel600, Inconel686 Hastelloy-C276, Silver

Instrument connection	Standard	Options
Capillary tubing	Top entry	
Threaded	1/2" BSP	1/4" NPT / 1/2" NPT / 1/4" BSP

Features	Standard	Options
Capillary tubing	AISI316	
Armoring	AISI304	PVC sleeve black Polyolefin sleeve black Polyolefin sleeve white
Filling fluid	BSO22	Others see page 171
Diaphragm	AISI316L	On request
Temperature reducer		All instruments except DP
Temperature compensator		All instruments except PI
Fully welded construction		All instruments
Flushing connection		1 or 2 (with 1/4"npt plugs)
Calibration on process conditions		All instruments
Hydrogen applications	Gold coating	All AISI316 diaphragms
Special coatings		PTFE, FEP, ECTFE, PFA

minimum ranges for gauges and transmitters per diaphragm

Diaphragm diameters dD For process connections			Min. span in mbar For transmitters			Min. range in bar For pressure gauges PI		
Diaphragm	Thread		GP	AP	DP	Ø 63	Ø 100	Ø 160
89 mm	1/2" male	Fem	80	80	10	0.6	0.6	0.6
89 mm	3/4" male	Fem	80	80	10	0.6	0.6	0.6
89 mm	1" male	Fem	80	80	10	0.6	0.6	0.6

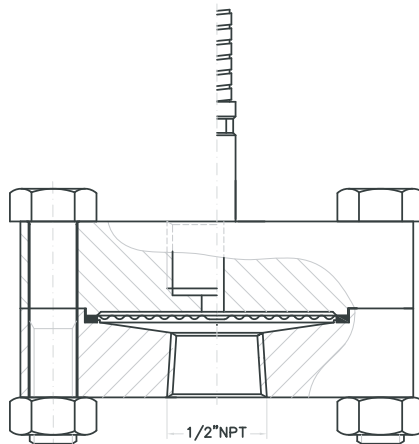
temperature effect on transmitter, capillary and seal

Diaphragm diameters dD For process connections			Temp. effect in mbar For DP transmitters			Temp. effect in mbar For GP /AP gauges PI		
Diaphragm	Thread		DP	Seal	Cap / mtr	GP/AP	Seal	Cap / mtr
89 mm	1/2" male	Fem	0.04	0.09	0.08	0.19	0.39	0.40
89 mm	3/4" male	Fem	0.04	0.09	0.08	0.19	0.39	0.40
89 mm	1" male	Fem	0.04	0.09	0.08	0.19	0.39	0.40

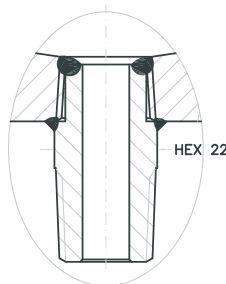
Temperature effect is per +10 °C and measured from 20 °C.

temperature effect on pressure indicator, capillary and seal

Diaphragm diameters dD For process connections			Temp. effect in mbar per 10 °C On pressure indicators					
Diaphragm	Thread		Bar	Ø 63	Ø 100	Ø 160	Seal	Cap / mtr
89 mm	1/2" male	Fem	60 bar	0.4	2.0	3.0	0.4	0.9
89 mm	3/4" male	Fem						
89 mm	1" male	Fem	60 bar	0.2	1.0	1.0	0.4	0.9



Threaded female process connection



Threaded male process connection