

ILS type seal – In-Line diaphragm seal

Design description

ILSF is typically used in combination with pressure transmitters for pressure measurement (≥ 2 barg) applications. Its pressure rating is defined by the flanges between which it is clamped and as such it can be used for all pressure ratings.

Housing / diaphragm combinations

Body Material	Diaphragm material (wetted part)		
	General name	UNS	Wst.
AISI 316(L)	AISI 316L	S31603	1.4404
	Alloy C-276	N10276	2.4810

Flange standard, size, rating and facings

ASME B16.5			
Size	Rating	Facing	Roughness
1" to 6"	cl. 150 - cl. 2500	RF	Ra 3.2-6.3 μm
		RFSF	Ra <0.8-3.2 μm

EN 1092-1			
Size	Rating	Type	Roughness
DN25 to DN150	PN10-400	B1, E	Ra 3.2-12.5 μm
		B2, D	Ra <0.8-3.2 μm

Capillary tube and armor (protection)

The standard capillary mounting position is top side (axial) of the seal. Alternatively, the capillary can be placed at the side of the seal (radial). The standard tube material is TP316 (316SS), optionally available in Monel 400. There are three options in ID of the capillary; 2mm, 1mm, and 0.7mm. Badotherm capillaries are always protected against mechanical forces by armor. This doubled shielded armor consist is standard AISI 304, and optionally AISI 316. Additionally, the armor could be protected with a PVC sleeve in white, black, optionally with ATEX114 approval to protect against dust and water ingress and possibly corrosive ambient atmosphere.
-> See datasheet "Capillary lines"

Cooling options

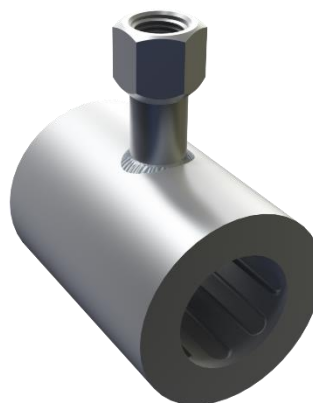
There are several ways to protect the instrument from elevated temperatures, such as the extended direct mount (EDM), a temperature reducer (TR) or by means of capillary.

-> See datasheet "cooling devices"

Testing

All seals are helium tested according the EN 13185 test procedure A.3 up to 10^{-9} mbar l/s before used on a diaphragm seal application.

-> See datasheet "Diaphragm Seal testing"



Material Certification

Material traceability and related certification are applicable for all process wetted parts. Material certification possibilities depend on the type of seal, the assembly construction and the materials used. Material certification is in accordance with EN10204 3.1.

Flange Marking & Traceability

All flanges are marked by the forging shop with heat number, material designation, size, and rating. Badotherm adds a Badotherm reference number and the manufacturers name to the flange for traceability purposes.

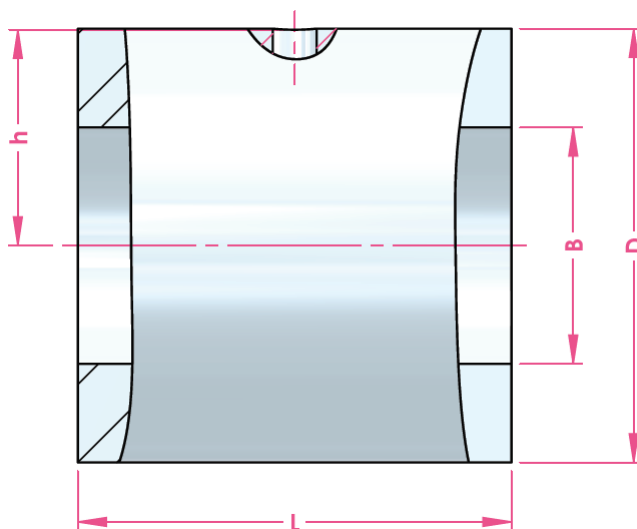
Flanges and origin

The seal parts are made from forged materials according to the applicable standards. The standard sourcing of flanges is of international origin. Optionally regional preference can be requested, for example materials from EU origin.

Cleanliness of the wetted parts

All parts are standard cleaned from excessive oil and grease. When additional requirements are needed, the parts can be cleaned according customer requirements and cleaning specifications.

Dimensions table: ILS seal



EN 1092-1

size	rating	D	B	h	L	weight
DN25	PN10-400	68.0	28.5	32.0	100.0	3.2 kg
DN40		88.0	43.1	42.0		4.8 kg
DN50		100.0	54.5	48.0		6.0 kg
DN65		120.0	70.3	58.0		7.6 kg
DN80		138.0	82.5	67.0	60.0	5.9 kg
DN100		160.0	107.1	78.0		7.2 kg

All dimensions in mm

ASME B16.5

size	rating	D	B	h	L	weight
1"	cl.150-2500	50.0	28.5	23.0	100.0	3.2 kg
1.5"		73.2	43.1	34.6		4.8 kg
2"		91.9	54.5	44.0		6.0 kg
2.5"		104.6	70.3	50.3		7.6 kg
3"		127.0	82.5	61.5	60.0	5.9 kg
4"		157.2	107.1	76.6		7.2 kg

All dimensions in mm

DSS 7026 – 16th of November 2020

Change log

Date	Change

Holland – Romania – India – Thailand – Dubai – USA

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