BHV SENZORY

TSZ-M pressure transmitter with process connection (i.e. with a diaphragm chemical seal)

ATEX 0311

- **analog output signal**
- **accuracy 0,5% FS (or better)**
- **high overloading capacity**
- **long-term stability**
- **various process connection options**
- **special design for aggressive media**
- **hot media design**
- **sanitizable design (CIP)**
- **explosion-proof design (ATEX)**

The diaphragm chemical seal prevents the measured fluid from entering the instrument. This is sometimes necessary due to the following circumstances:

- It must be possible to completely clean the instrument of residues of the measured product (CIP design CIP – cleaning on place); this requirement is usual in the food processing and pharmaceutical industry;
- The measured fluid would be solidifying, crystallizing or making sediments (e.g. when sludge, paint and varnish, adhesives, etc. are measured);
- The measured fluid is aggressive or abrasive while the isolating diaphragm makes it possible for the wetted parts to be made of special resistant materials (e.g. the most suitable material that resists most aggressive acids is tantalum);
- The measured fluid is hot (e.g. melted asphalt and plastic materials).

The body of the sensor and the process connection are usually made of stainless steel.

The isolating diaphragm is either made of stainless steel or of special materials: tantalum, nickel, special alloys (e.g. Hastelloy C-276), or it may be coated PTFE layer or gold-plated.

For measurement of high-temperature fluids (up to 400℃) the set contains a cooling tower that reduces transmission of heat to the instrument body.

The basic structural element of the instrument is a high-quality piezoresistive pressure sensor.

The use of a high-quality sensor results in high accuracy, overloading capacity and long-term stability of the instrument. The output signal of the sensor is linearized, temperature-compensated and calibrated with the use of a built-in microcomputer. The output signal is then generated in the output transducer. Besides the common analog signal you can also select the RS485 digital output.

The sensor is also produced in an explosion-proof (intrinsic safe) design with an ATEX certificate.

BHV senzory, Družstevní 20
CZ 252 68 Kněževes u Prahy
tel.: +420 / 220 920 253
fax: +420 / 220 922 036
e-mail: bhvsenzory@bhvsenzory.cz
http://www.bhvsenzory.cz

rev 1106

Specification

Pressure ranges:	0 … 6 kPa to 0 … 700 bar
Measurement type:	Gauge pressure, absolute pressure, level measurement
Accuracy:	0,5% FS for pressure range from 25 kPa, 1% FS for less Option: 0,25% FS – depends on the range and the type of the seal
Long-term stability:	better than 0,15 % FS per a year
Supply voltage:	8 – 28 V DC (2-wire configuration) 15 – 36 V DC (3-wire configuration)
Output signal:	2-wire: 4 … 20 mA 3-wire: 4 … 20 mA, 0 … 20 mA, 0 … 1 (5; 10) V .. etc. (alternative on request) RS 232, RS 485
Load driving capability:	2-wire configuration: Rz=(Usup – 8V) / Iout 3-wire configuration: Rz=(Usup – 3V) / Iout Rz – load resistance [kΩ], Usup - power supply voltage [V], Iout - output current [mA] RS 485: 9600 Bd
Operating temperature range:	Ambient: -20 to +70℃ Medium: -20 to +400℃ storage 5 to 40℃
Seal rating:	IP 65 (option: IP68 on request)
Electrical connection:	- mating socket with screw terminal connections to DIN 43650 - cable with a hollow conduit (PUR, with PTFE protection), IP68
Explosion-proof design:	Intrinsic safety, II 1/2G Ex ia IIC T5

Process connection – chemical seal

Type C Clamp (Tri-Clamp) connection in accordance with ISO 2582, ISO 1127, DIN32676 and DIN 11864	PN 40: DN 25, 32, 40 PN 25: DN 50, 65
Type M Food-industry connection according to DIN11851	PN 40: DN 25, 32, 40 PN 25: DN 50, 65
Type F Threaded pin with the diaphragm on the frontal area	PN 600: G ½", ¾", 1", 1 ¼", 1 ½", 2"
Type P Flush flange in accordance with EN 1092-1 or ANSI B 16,5	PN 40: DN 25, 32, 40, 50, 65, 80 Class 150: ½", ¾", 1", 1 ½" , 2" alternative PN or class on request
Type S Sandwich design for counter-flange installation	PN40: DN 50, 80 Class 150: ½", ¾", 1", 1 ½" , 2" alternative PN or class on request
Type Q Semi flushed diaphragm in accordance with EN 1092-1 or ANSI B 16,5	PN 40: DN 25, 32, 40, 50, 65, 80 Class 150: ½", ¾", 1", 1 ½" , 2" alternative PN or class on request
Type K Internal diaphragm screwed type, with thread connection	PN 40: DN 70, 100
Type W Internal diaphragm with weld body, thread connection	PN 40: DN 40, 50 PN 160: DN 40; PN 600: DN 32
Type Z Flanges for the paper industry (FDP, IDBF, IDSF)	PN: DN 48
Alternative: Special food-processing connections: Varivent®, NEUMO Bio-Control®, DRD flange, APV flange, Finger type seal	
Body material:	AISI 316L PVDF (option for type K – bottom part)
Diaphragm material:	AISI 316L, tantal, Hastelloy Option: protection with coated PTFE cover
Filling liquid:	silicon oil, food-industry oil, high-temperature oil, halocarbon
Cool-tower	short, type A, up to 150℃ extended (capillary design), type B, up to 400℃

TSZ-M

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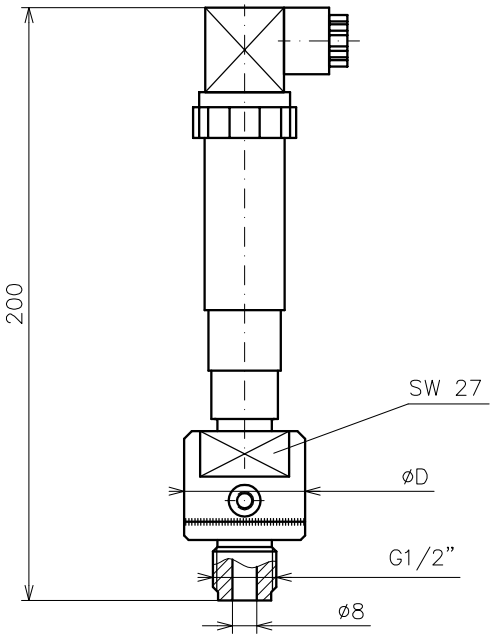
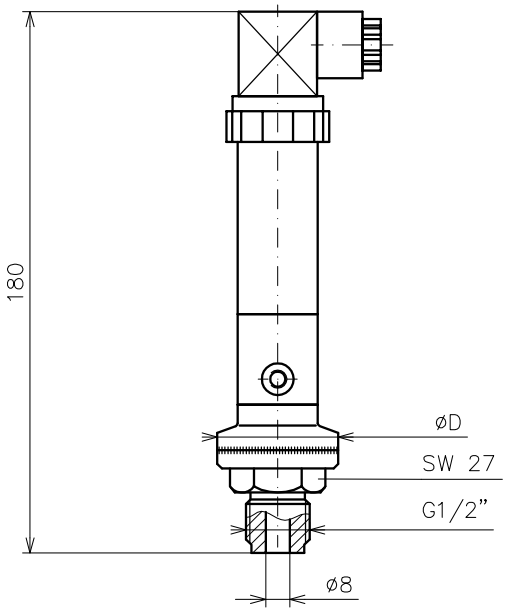
Seal type W



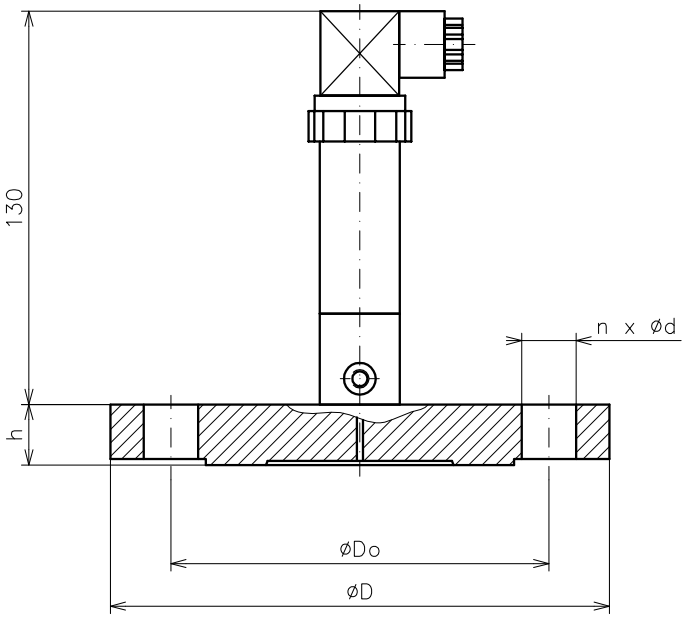
seal–type	W32	W41
øD [mm]	32.5	40
PN	600	160

Seal type W



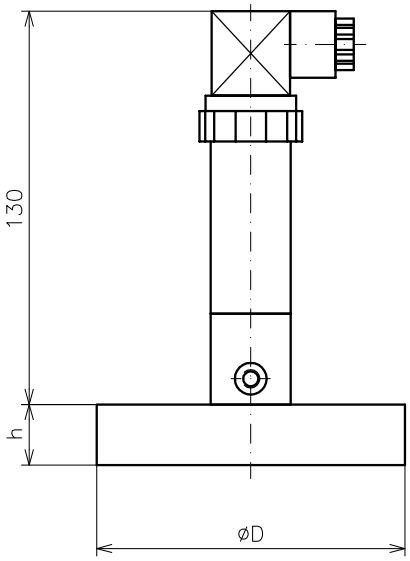
seal–type	W40	W50
øD [mm]	40	50
PN	40	25

Seal type P



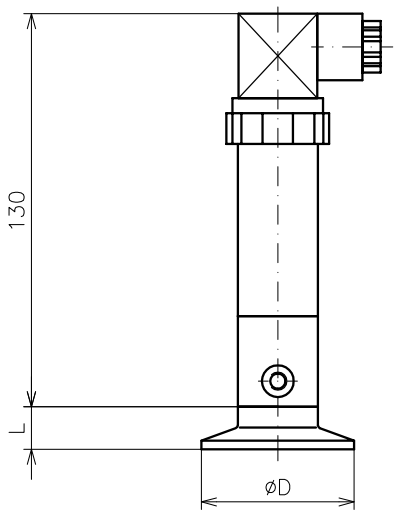
seal–type	P25	P32	P40	P50	P65	P80
øD [mm]	115	140	150	165	185	200
h [mm]	16	16	18	20	20	22
øDo [mm]	85	100	110	125	145	160
n	4	4	4	4	4	8
ød [mm]	14	18	18	18	18	18
PN	40	40	40	40	40	40

Seal type S



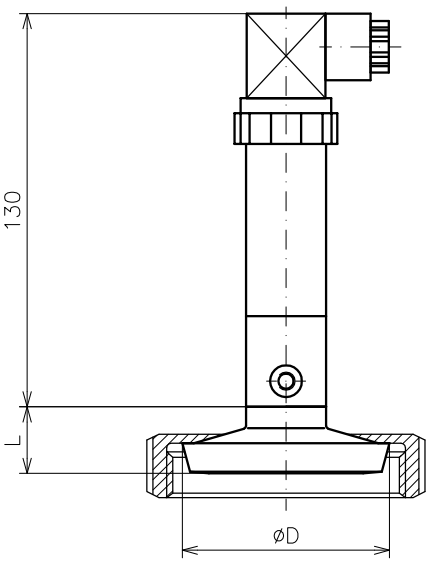
seal–type	S25	S50	S80
øD [mm]	68	102	133
h [mm]	18	20	22
PN	40	40	40

Seal type C



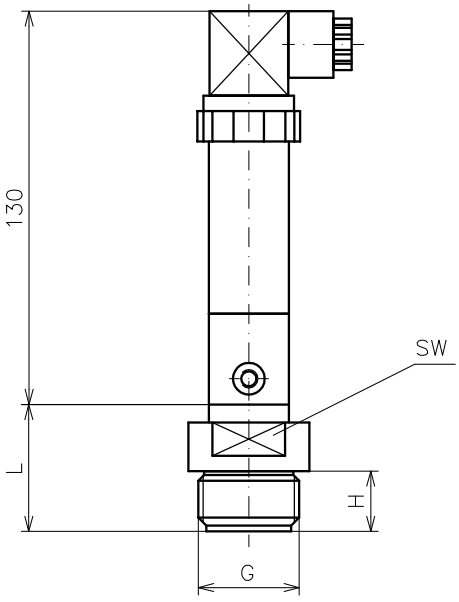
seal–type	C25	C32	C40	C50	C65
øD [mm]	50.5	50.5	50.5	64	91
L [mm]	15	15	15	15	15
PN	40	40	40	40	25

Seal type M

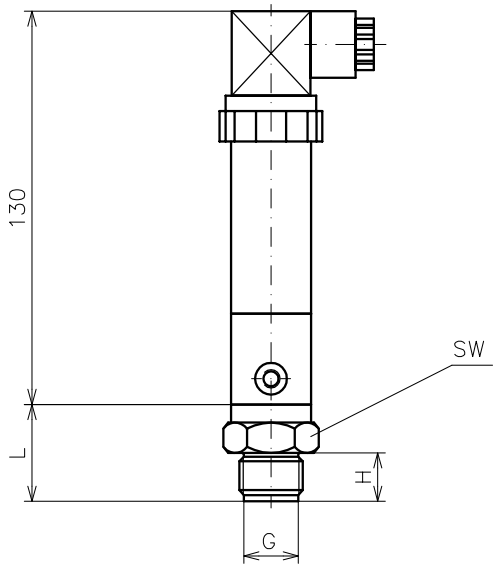


seal–type	M25	M32	M40	M50	M65
øD [mm]	44	50	56	68.5	86
L [mm]	22	22	22	22	24
PN	40	40	40	25	25

Seal type F

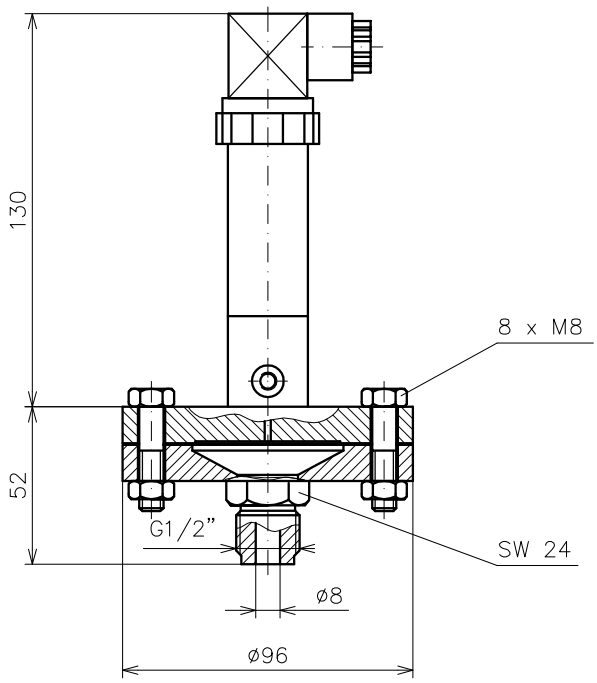


Seal type F



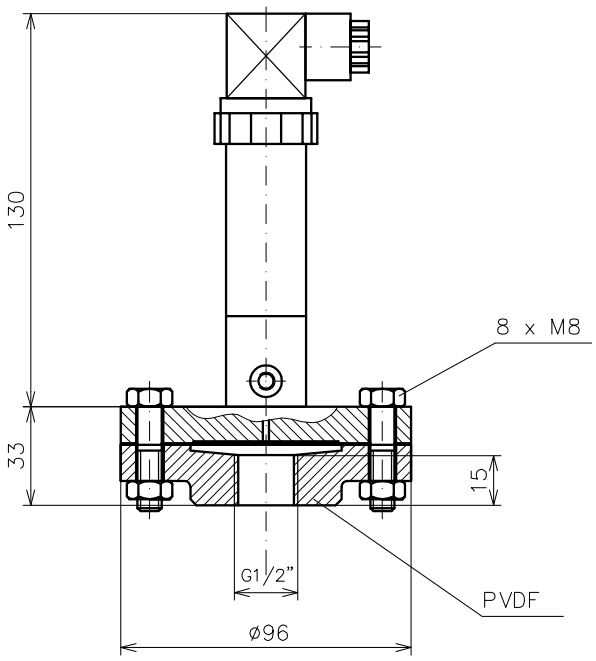
seal–type	F12	F34	F10	F54	F64	F20
G	1/2"	3/4"	1"	5/4"	6/4"	2"
H [mm]	16	20	20	30	30	30
SW	27	32	32	41	55	60
L [mm]	34	36	43	55	55	55
PN	600	600	600	600	600	600

Seal type K



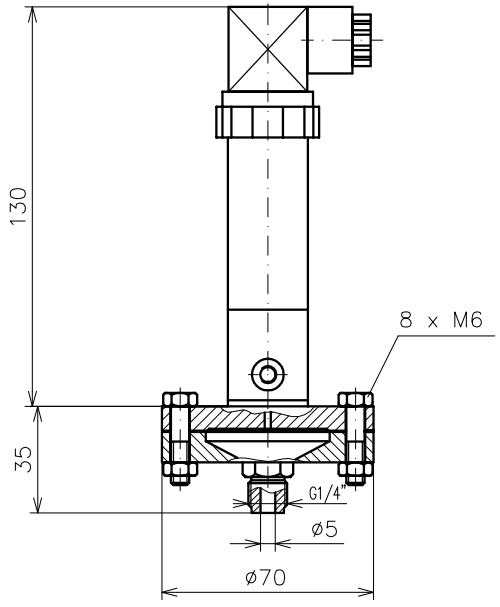
seal–type	K96
PN	40

Seal type K



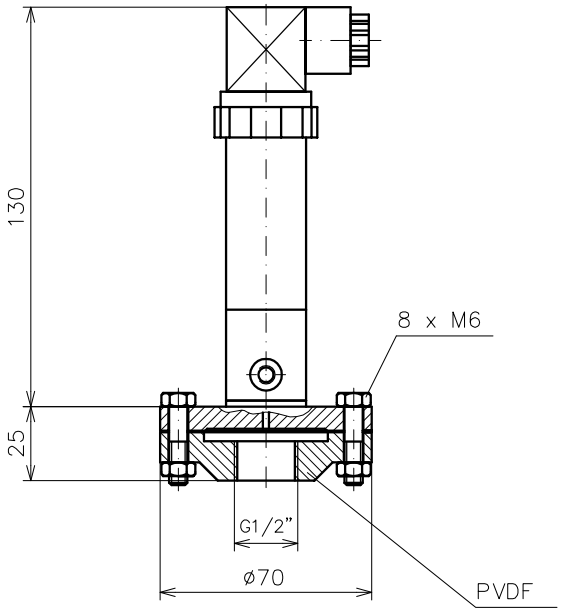
seal–type	K97
PN	40

Seal type K



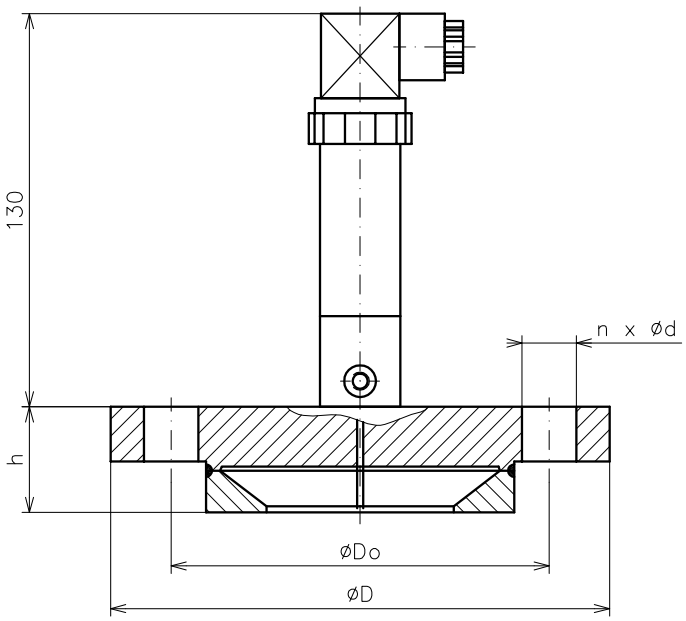
seal–type	K70
PN	40

Seal type K



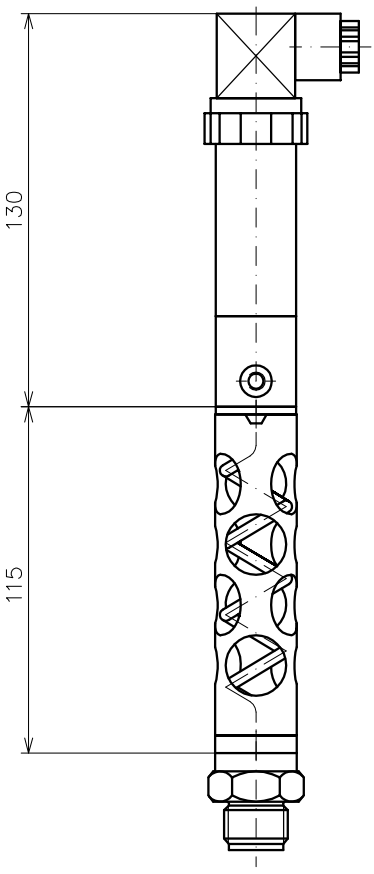
seal–type	K71
PN	40

Seal type Q

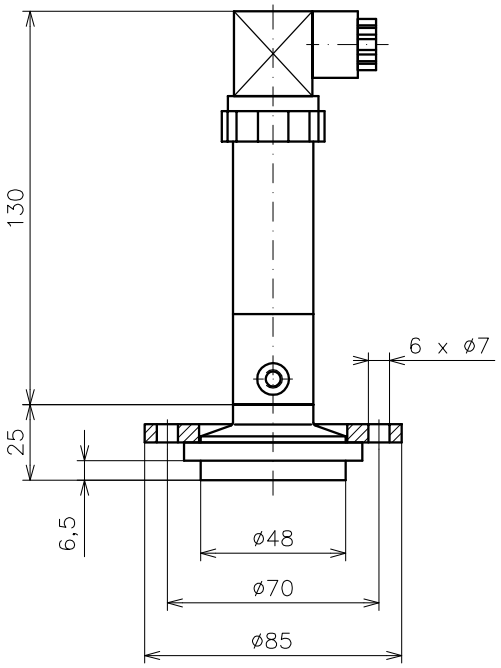


seal–type	Q15	Q25	Q32	Q40
øD [mm]	95	115	140	150
h [mm]	14	16	16	18
øDo [mm]	65	85	100	110
n	4	4	4	4
ød [mm]	14	14	18	18
PN	40	40	40	40

Cool tower – type B
Tmax 400°C



Seal type Z



seal–type	Z48
PN	40

Cool tower – type A
Tmax 150°C