Pressure Transmitters for Sanitary Applications Model SA-11

Applications

- Food and beverage industry
- Pharmaceutical industry
- Biotechnology industry
- Sanitary applications

Special Features

- Wide range of aseptic process connections
- Flush diaphragm with a surface roughness of Ra < 0.4 µm
- All welded construction
- 3-A and EHEDG certified
- Ingress protection up to IP 68

Pressure Transmitter Model SA-11 with field case and VARIVENT® connection

Description

The SA-11 pressure transmitter has been specially designed to meet the requirements of the food, beverage, pharmaceutical and biotechnology industries. With its resistance to chemical cleaning liquids and high temperatures, this transmitter is particularly suited for CIP/SIP cleaning processes. The flush diaphragm is directly welded to the process connection, thus ensuring a gap-free connection and eliminating the need for additional sealing gaskets. In order to provide a pressure measuring instrument which is free of dead spaces, a wide range of aseptic process connections (Clamp, threaded, VARIVENT® or NEUMO®) are available.

The SA-11 pressure transmitter meets the high requirements of sterile engineering processes and is certified in accordance with the 3-A Sanitary Standards and the EHEDG.

Structure

A flush diaphragm of stainless steel 1.4435 separates the process medium from the pressure sensor.
The process pressure is hydrostatically transmitted from the diaphragm to a piezo-resistive sensor via a filling fluid approved by the FDA.
Pressure ranges of 0 ... 250 mbar up to 0 ... 25 bar are available. The pressure transmitter SA-11 is supplied by DC 10 (14) ... 30 V.
Electronic output signals 4 ... 20 mA, 0 ... 20 mA and 0 ... 10 V outputs are available.
A stainless steel case with an ingress protection of up to IP 68 provides enough protection to enable external cleaning with a water jet or the use in high humidity environments.

Data Sheets showing similar devices:
Electronic pressure switch; Model PSA-21; see data sheet PE 81.84

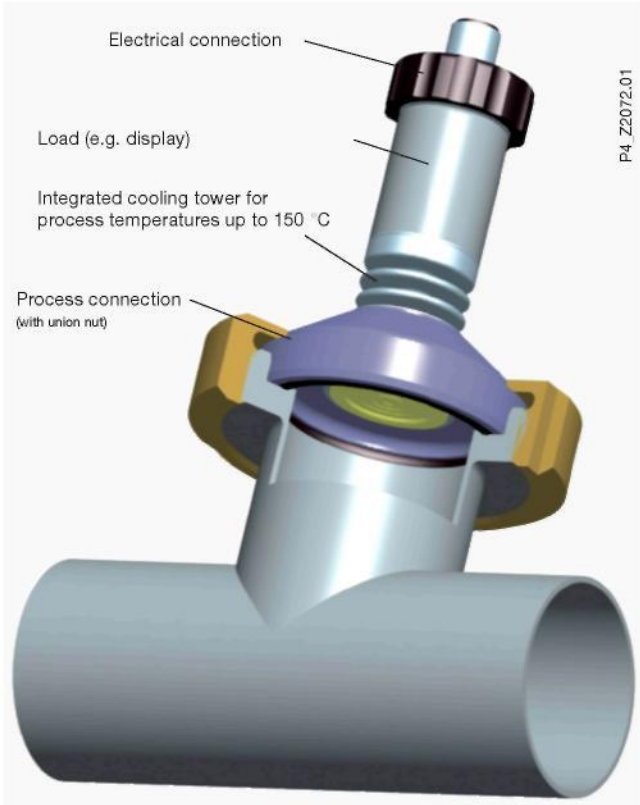
Specifications		Model SA-11									
Pressure ranges	bar	0.25	0.4	0.6	1	2.5	4	6	10	16	25
Over pressure safety [1]	bar	2	2	4	5	10	17	35	35	80	80
Burst pressure	bar	2.4	2.4	4.8	6	12	20.5	42	42	96	96
	{Vacuum, gauge pressure, compound range, absolute pressure are available}										
	1) The compressive strength of the connector fittings must be taken into account										
Process connection		■ Tri-Clamp 1 ½ " , 2 "									
		■ Clamp DIN 32 676 DN 32, 40, 50									
		■ Clamp ISO 2852 DN 33,7, 38, 40, 51									
		■ Female union nut DIN 11 851 DN 25, 40, 50									
		■ Female union nut SMS DN 1 ½ " , 2 "									
		■ Female union nut IDF DN 1 ½ " , 2 "									
		■ Female union nut APV-RJT DN 1 ½ " , 2 "									
		■ VARIVENT® form F, N									
		■ Female union nut DIN 11 864-1, flange DIN 11 864-2, clamp DIN 11 864-3									
		■ NEUMO BioControl® size 50, 65									
		■ NEUMO BioConnect® form R, V - DN 40, 50									
		■ Flange connection DRD									
		Further connections on request									
Material											
■ Wetted parts		Stainless steel 1.4435									
■ Case		Stainless steel 1.4571									
System fill fluid		Synthetic oil, KN 77, FDA approved {Neobee ® M-20, KN 59, FDA approved}									
Power supply U+	U+ in VDC	10 < U+ ≤ 30 (14 ... 30 with signal output 0 ... 10 V)									
Signal output and	R_A in Ohm	4 ... 20 mA, 2-wire	$R_A \leq (U+ - 10\ V) / 0.02\ A$								
maximum load R_A		0 ... 20 mA, 3-wire	$R_A \leq (U+ - 3\ V) / 0.02\ A$								
		{0 ... 10 V, 3-wire}	$R_A > 10\ k$ {other signal outputs e.g. CANopen on request }								
Adjustability zero/span	%	± 5 using potentiometer inside the instrument									
Response time (10 ... 90 %)	ms	≤ 10 ms									
Dielectric strength	VDC	500 [2]									
	2) NEC Class 02 power supply (low voltage and low current max. 100 VA even under fault conditions)										
Accuracy [3]	% of span	≤ 0.5 {0.25} (adjusted in vertical mounting position with lower pressure connection)									
	3) Including non-linearity, hysteresis, zero point and full scale error (corresponds to error of measurement per IEC 61298-2)										
Non-linearity	% of span	≤ 0.2 (BFSL) per IEC 61298-2									
Non-repeatability	% of span	≤ 0.1									
1-year stability	% of span	≤ 0.2 (at reference conditions)									
Permissible temperature ranges											
■ Medium [4]	°C	-20 ... +150									
■ Ambient [4]	°C	-20 ... +80									
■ Storage [4]	°C	-40 ... +100									
	4) Also complies with EN 50178, Tab. 7, Operation (C) 4K4H, Storage (D) 1K4, Transport (E) 2K3										
Compensated temperature range	°C	0 ... +80									
Temperature coefficients within											
compensated temperature range:											
■ Mean TC of zero	% of span	≤ 0.2 / 10 K	with pressure range 0 ... 0.6 bar to 0 ... 25 bar								
	% of span	≤ 0.25 / 10 K	with pressure range 0 ... 0.4 bar								
	% of span	≤ 0.4 / 10 K	with pressure range 0 ... 0.25 bar								
■ Mean TC of range	% of span	≤ 0.2 / 10 K									
CE-conformity											
■ Pressure equipment directive		97/23/EC									
■ EMC directive		2004/108/EEC, EN 61 326 Emission (Group 1, Class B) and									
		Immunity (industrial locations)									
Shock resistance	g	500 per IEC 60068-2-27 (mechanical shock)									
Vibration resistance	g	15 per IEC 60068-2-6 (vibration under resonance)									

{ } Items in curved brackets are options for additional price.

Specifications		Model SA-11
Electrical connection		■ 4-pin L-connector per EN 175301-803, form A
		■ Stainless steel field case with internal spring clip terminal, cross section max. 2.5 mm²
		■ Circular connector M12 x 1, 4-pin
		■ Flying lead with 10 m vented cable (zero/span not adjustable)
Wiring protection		
■ Wiring protection	VDC	36
■ Overvoltage protection		S+ towards U-
■ Short-circuit proofness		U+ towards U-
■ Ingress protection		Per IEC 60 529 / EN 60 529, see page 4
Weight	kg	Approx. 0.5 (ca. 0.6 with option accuracy 0.25% of span)

Example for installation

Pressure Transmitter Model SA-11 with circular connector M12 x 1 and union nut DIN 11 864-1 assembled on welding socket with pipe



The total height for pressure transmitter Model SA-11 is calculated from the height of the electrical connection, including pressure transmitter case, and the process connection.

Dimensions in mm

Ingress protection per IEC 60 529. The ingress protection classes specified only apply when the pressure transmitter is connected with female connectors that provide the corresponding ingress protection.

Electrical connections

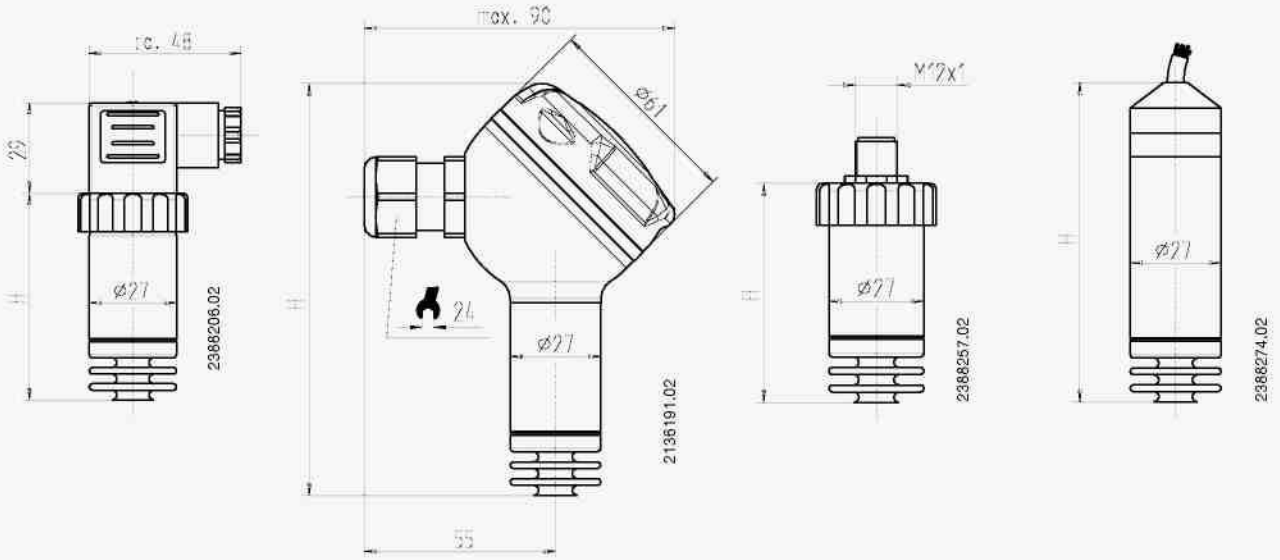
DIN 175301-803 A
L-connector
conductor cross section
up to max. 1.5 mm², conductor outer diameter
6-8 mm
IP 65
Order code: A4

Stainless steel field case
IP 67
ground terminals, brass
nickel-plated
Order code: FH

M12 x 1
Circular connector
4-pin
IP 67
Order code: M4

Connectors are not included in delivery

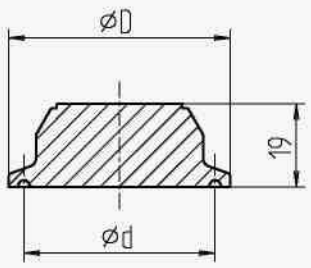
Flying leads
zero/span not adjustable,
for conductor cross section
up to max. 0.5 mm², AWG 20
with end splices, conductor
outer diameter 6.8 mm,
IP 68
Order code: EM



Design	Dimension H in mm	
	with accuracy 0.5 %	with accuracy 0.25 %
L-connector	64	84
Field case	123	138.5
M12 x 1	64	84
Flying leads	79.5	95

Process connections

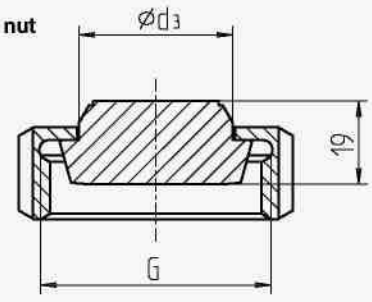
Clamp



Design		Dimensions in mm	
		ØD	Ød
Tri-Clamp	1 1/2"	50	43.5
	2"	64	56.6
DIN 32 676	DN 32	50	43.5
	DN 40	50	43.5
	DN 50	64	56.6
ISO 2852	DN 33.7	50	43.5
	DN 38	50	43.5
	DN 40	64	56.6
	DN 51	64	56.6

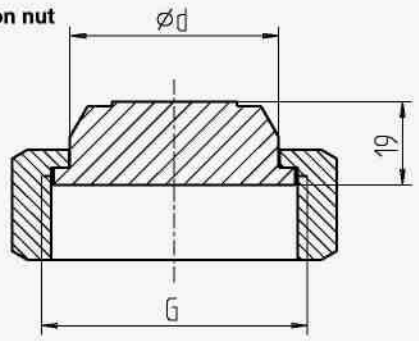
Female union nut DIN 11 851

with union nut,
for pipes per
DIN 11 850



Design		Dimensions in mm	
		G	$Ød_3$
DIN 11 851	DN 25	Rd 52 x 1/6	44
	DN 40	Rd 65 x 1/6	48
	DN 50	Rd 78 x 1/6	61

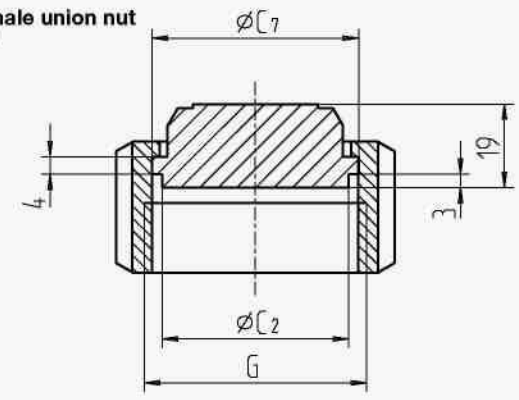
Female union nut
SMS



11490071.01

Design		Dimensions in mm	
		G	$Ød_3$
SMS	1 1/2"	Rd 60 x 1/6	47.5
	2"	Rd 70 x 1/6	60

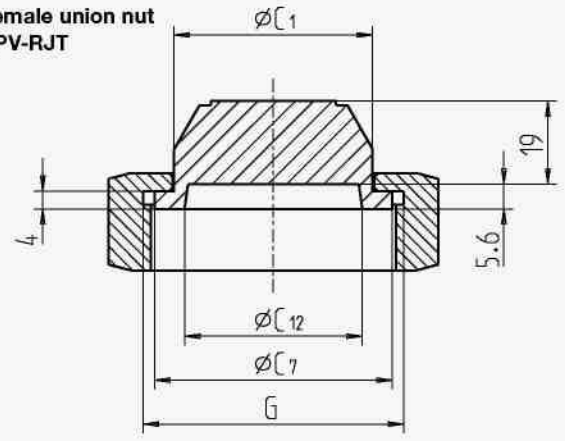
Female union nut
IDF



11490251.01

Design		Dimensions in mm		
		G	$ØC_2$	$ØC_7$
IDF	1 1/2"	IDF 1.5	42.5	47
	2"	IDF 2	56	60.5

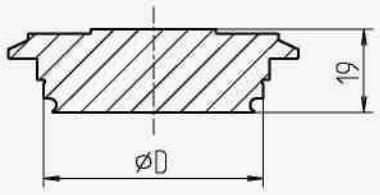
Female union nut
APV-RJT



11490293.01

Design		Dimensions in mm			
		G	$ØC_1$	$ØC_7$	$ØC_{12}$
APV-RJT	1 1/2"	2 5/16" x 8	45.2	54	40.5
	2"	2 7/8" x 6	57.7	66.6	53.2

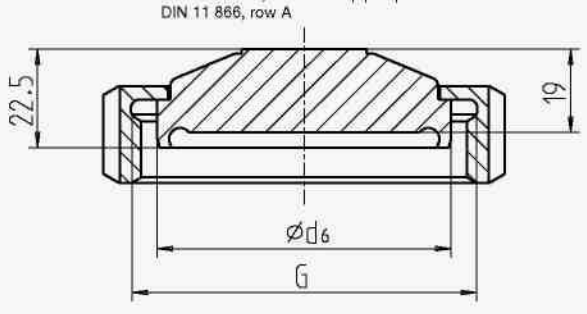
VARIVENT®



2388320.02

Design		Dimensions in mm
		ØD
VARIVENT®	Form F	50
	Form N	68

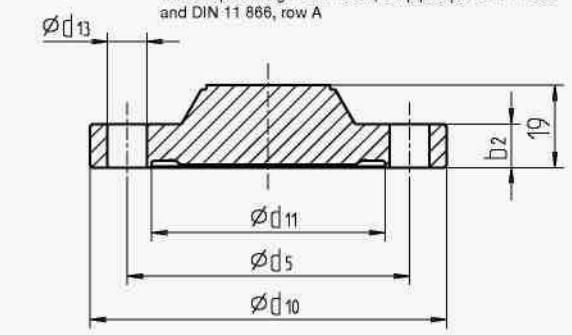
Female union nut
DIN 11 864-1 with union nut, Form A for pipes per DIN 11 850 and DIN 11 866, row A



2388312.02

Design		Dimensions in mm	
		G	$Ød_6$
DIN 11 864-1	DN 40	Rd 65 x 1/6	54.9
	DN 50	Rd 78 x 1/6	66.9

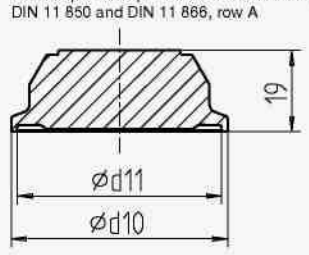
Flange connection
DIN 11 864-2 with aseptic flange with notch, for pipes per DIN 11 850 and DIN 11 866, row A



11490544.01

Design		Dimensions in mm				
		$Ød_5$	$Ød_{10}$	$Ød_{11}$	$Ød_{13}$	$Øb_2$
DIN 11 864-2	DN 40	65	82	53.7	4 x 9	10
	DN 50	77	94	65.7	4 x 9	10

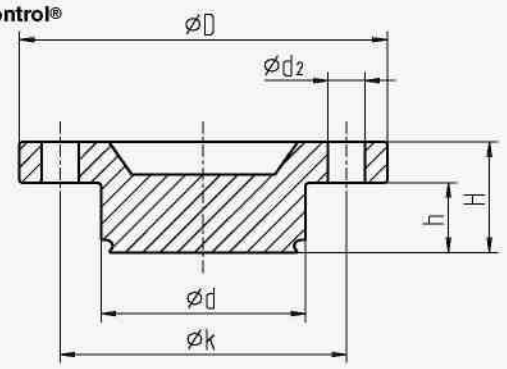
Clamp
DIN 11 864-3 with aseptic clamp connection with notch, for pipes per DIN 11 850 and DIN 11 866, row A



11490668.01

Design		Dimensions in mm	
		$Ød_{10}$	$Ød_{11}$
DIN 11 864-3	DN 40	64	53.7
	DN 50	77.5	65.7

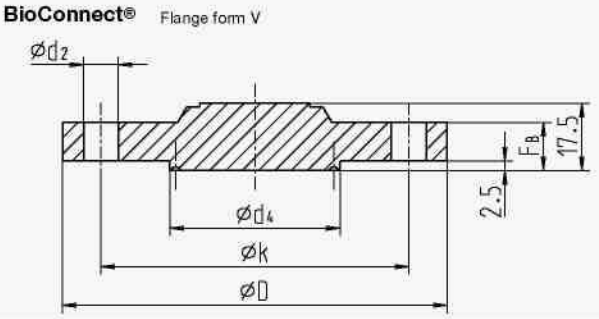
NEUMO
BioControl®



11490668.01

Design		Dimensions in mm					
		Ød	$Ød_2$	ØD	Øk	h	H
BioControl®	Gr. 50	50	4x9	90	70	17	27
	Gr. 65	68	4x11	120	95	17	27

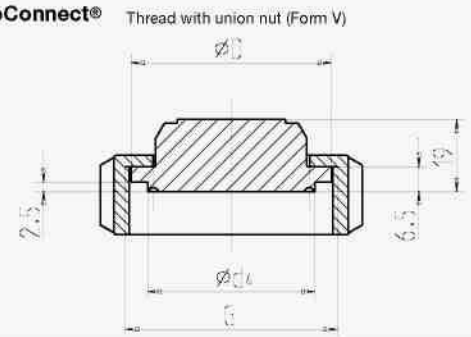
NEUMO
BioConnect® Flange form V



11266831.02

Design		Dimensions in mm				
		$Ød_2$	$Ød_4$	ØD	Øk	F_B
BioConnect®	DN 40	4x9	44.2	100	80	10
	DN 50	4x9	56.2	110	90	12

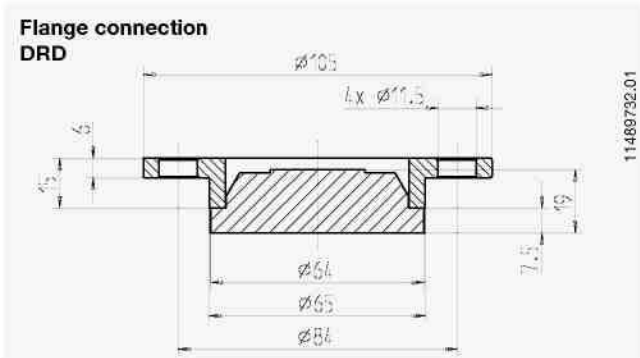
NEUMO
BioConnect® Thread with union nut (Form V)



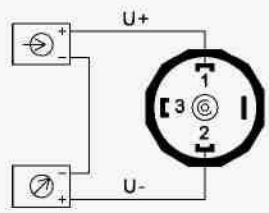
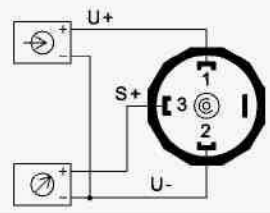
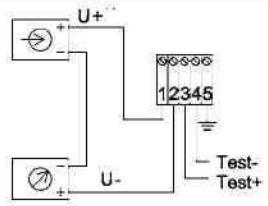
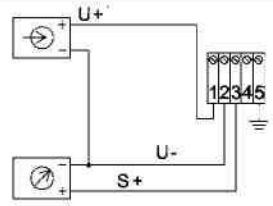
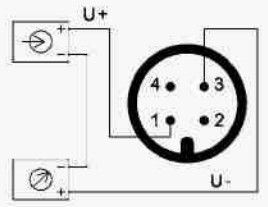
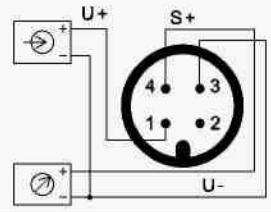
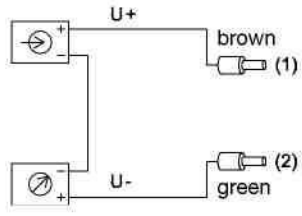
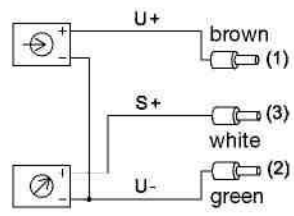
11489520.01

Design		Dimensions in mm		
		G	$Ød_4$	ØD
BioConnect®	DN 40	M56 x 2	44.2	53
	DN 50	M68 x 2	56.2	65

Flange connection
DRD



Wiring details

Version	2-wire	3-wire
L-Connector DIN 175301-803 A		
Stainless steel field case		
Circular connector M12 x 1, 4-pin		
Flying leads with 10 m of vented cable **Legend:** Power supply Load (e.g. display)		

Ordering information

Model / Signal output / Pressure range / Process connection / Electrical connection / Options

Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing.
Modifications may take place and materials specified may be replaced by others without prior notice.

07/2009 GB

ООО ТД «АЗТЭО»
624260, Россия Свердловская область,
г. Асбест, пр. Ленина, 8/3
Тел: 8 (34365) 2-87-74, 2-45-52
Факс:8 (34365) 2-87-74
E-mail: zakaz@azteo.ru