Pressure Transmitters

for Food Industries and for Sterile Process Technology

TRONIC LINE

Standard Series, aseptic • Model SA-11

- **Flush diaphragm**
- **Crevice free**
- **Free of dead space**
- **Certified according to EHEDG and 3A Sanitary Standards**
- **Aseptic process connections**
- **Wetted parts of stainless steel 1.4435**
- **Stainless steel housing**
- **Ingress protection IP 65 to IP 68**

Model SA-11
Process connection Clamp

Model SA-11
Process connection female union nut

Model SA-11
Process connection VARIVENT®

General features

The pressure transmitter SA-11 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 suitable for the conditions of CIP/SIP cleaning processes. The flush all-metal measuring diaphragm is directly welded with the process connection to ensure a crevice free sealing between the process connection and the measuring diaphragm. Additional sealing gaskets are not required.
For an instrumentation without dead space aseptic process connections (Clamp, threaded or VARIVENT®) are available.
The pressure transmitter SA-11 is ideally suited for the high standard requirements of sterile engineering processes and is certified in accordance with the 3A Sanitary Standards and the EHEDG. The pressure transmitting fluid used has been approved by the FDA.

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.
An IP 68 stainless steel housing provides enough protection to enable external cleaning with a water jet or the use in high humidity environments.

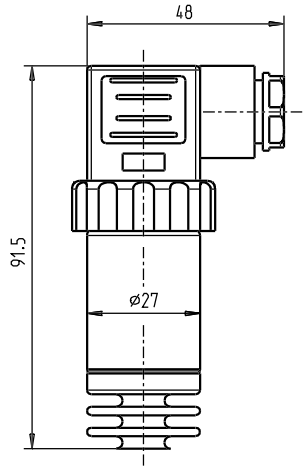
Supplementary data sheets:

- Pressure transmitters with flush diaphragm (see data sheet PE 81.01) **Model S-11**
- Universal transmitters with flush diaphragm (see data sheet PE 86.01) **Model UT-11**
  Process connection G 1 B, with flush O-ring according to EHEDG for weld-on sockets

Specifications		Model SA-11									
Pressure ranges	bar	0.25	0.4	0.6	1	2.5	4	6	10	16	25
Over pressure safety	bar	2	2	4	5	10	17	35	35	80	80
Burst pressure	bar	2	2	4	5	10	17	35	35	80	80
Pressure reference		relative pressure									
		{absolute pressure: 0 ... 0.25 bar abs to 0 ... 16 bar abs}									
		{special pressure range 800 ... 1200 mbar abs}									
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 DIN 11 864-1 DN 40, 50									
		VARIVENT ® form F, N									
Material											
• wetted parts		stainless steel 1.4435									
• case		stainless steel 1.4571									
internal transmission fluid		Synthetic oil, KN 77, FDA approval									
Power supply U_B	DC V	$10 < U_B \leq 30$ (14 ... 30 V with signal output 0 ... 10V)									
Signal output and		4 ... 20 mA, 2-wire system $R_A \leq (U_B - 10\ V) / 0.02\ A$ with R_A in Ohm and U_B in Volt									
maximum load R_A		0 ... 20 mA, 3-wire system $R_A \leq (U_B - 3\ V) / 0.02\ A$ with R_A in Ohm and U_B in Volt									
		{0 ... 10 V, 3-wire system} R_A >10 kOhm {other signal outputs on request}									
Adjustability zero/span	%	± 10									
Response time (10 ... 90 %)	ms	≤ 10									
Accuracy	% of span	≤ 0.5 (limit point calibration) (calibrated in vertical mounting position									
	% of span	≤ 0.25 (BFSL) with pressure connection bottom)									
Hysteresis	% of span	≤ 0.1									
Repeatability	% of span	≤ 0.05									
1-year stability	% of span	≤ 0.2 (at reference conditions)									
Permissible temperature of											
• medium	°C	-20 ... +150									
• ambient	°C	-20 ... +80									
• storage	°C	-40 ... +100									
Compensated temp. range	°C	0 ... +80									
Temperature coefficients in											
compensated temp. range:											
• mean TC of zero	% of span/10K	≤ 0.2 (≤ 0.25 with pressure range 0 ... 0.4 bar, ≤ 0,4 with pressure range 0 ... 0.25 bar)									
• mean TC of range	% of span/10K	≤ 0.2									
CE -Conformity		Interference emission and immunity see EN 61 326; declaration of conformity on request									
Shock resistance	g	1000 according to IEC 770 (mechanical shock)									
Vibration resistance	g	20 according to IEC 770 (vibration under resonance)									
Electrical connection		4-pin L-plug per DIN 43 650									
		Snap Cap with internal Clamp of 1.5 mm^2 max., rotatable by 300°,									
		material: polyamide									
		locking plug M 12 x 1, 4-pin									
		flying lead with 10 m vented cable, (zero/span not adjustable)									
Wiring protection		protected against polarity crossing, overvoltage and short circuiting;									
Ingress protection		IP 65 with L- plug, IP 67 with Snap Cap and locking plug,									
per EN 60 529 / IEC 529		IP 68 with cable									
Weight	kg	approx. 0.2									
Dimensions		see drawings									
Items in curved brackets { } are optional extras for additional price.											

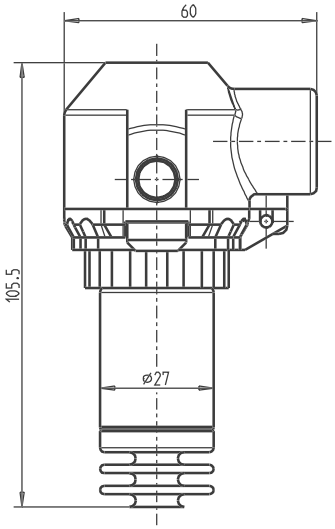
Dimensions in mm

4-pin L-plug
DIN 43 650, IP 65



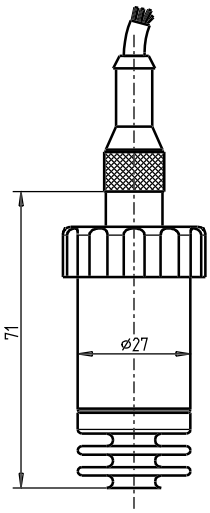
2388 206.01

Snap Cap, IP 67



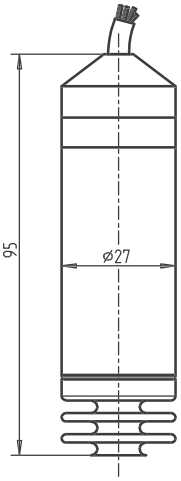
2388 215.01

locking plug, 4-pin
M 12 x 1, IP 67



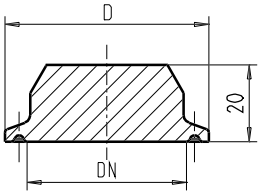
2388 257.01

flying lead
IP 68

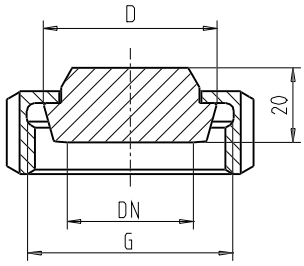


2388 274.01

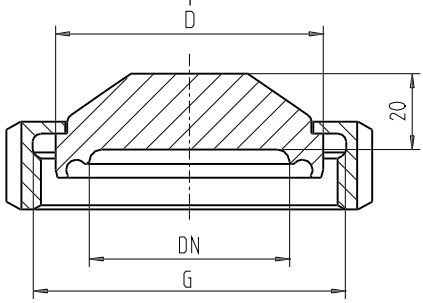
Process connections



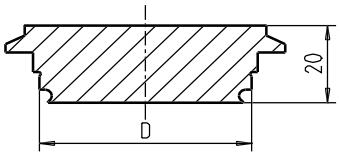
2388 282.01
Clamp



2388 290.01
DIN 11 851



2388 312.01
DIN 11 864-1



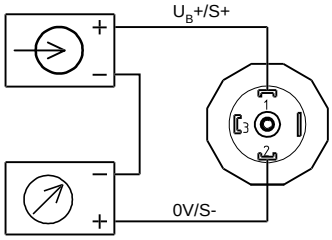
2388 320.01
VARIVENT ®

Process connection		Nominal size DN [mm/in.]	Dimensions [mm]	
			D	G
Clamp	Tri-Clamp	1 ½ “	50	
		2 “	64	
	DIN 32 676	DN 32	50	
		DN 40	50	
		DN 50	64	
	ISO 2852	DN 33.7	50	
		DN 38	50	
		DN 40	64	
		DN 51	64	
Female union nut DIN 11 851 with conical coupling, for pipes acc. to DIN 11 850		DN 25	44	Rd 52 x ⅙
		DN 40	56	Rd 65 x ⅙
		DN 50	68.5	Rd 78 x ⅙
Female union nut DIN 11 864-1 with liner form A, for pipes acc. to DIN 11 850		DN 40	54.9	Rd 65 x ⅙
		DN 50	66.9	Rd 78 x ⅙
VARIVENT ®	form F	DN 25/32	50	
	form N	DN 40/50	68	

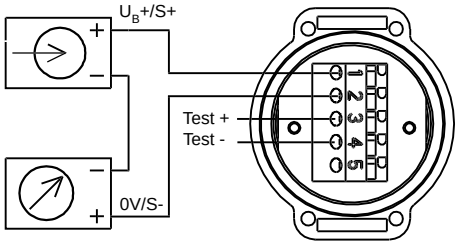
Wiring details

2-wire system

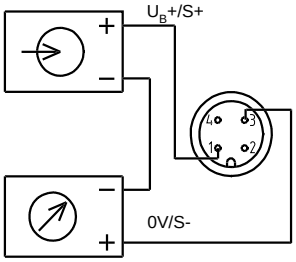
DIN 43 650 plug



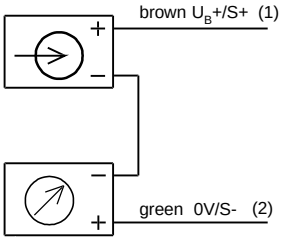
Snap Cap



locking plug, 4-pin
M 12 x 1

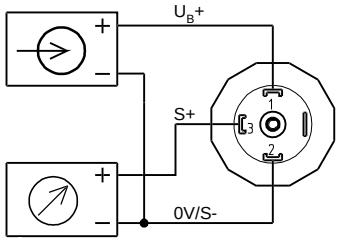


flying lead

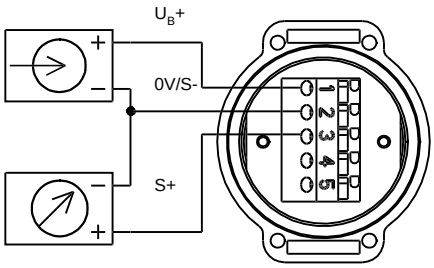


3-wire system

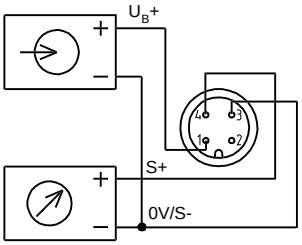
DIN 43 650 plug



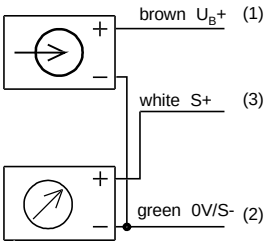
Snap Cap



locking plug, 4-pin
M 12 x 1



flying lead



Ordering information

Model / Signal output / Pressure range / Process connection / electrical connection / Optional extras required

Specifications and dimensions given in this document 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.

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