Pressure transmitter for general applications
Model S-10, standard version
Model S-11, flush diaphragm

Applications

- Mechanical engineering
- Hydraulics / Pneumatics
- General industrial applications
- Food industries

Special Features

- Pressure ranges from 0 ... 0.1bar to 0 ... 1000 bar
- Various industrial standard signal outputs
- Wiring with connector or flying leads
- Stock programm for short delivery times
- Vacuum tight

Fig. left Pressure transmitter S-10
Fig. center Pressure transmitter S-11
Fig. right Pressure transmitter S-11 with cooling element

Description

This series of pressure transmitters has been carefully designed to cover the majority of industrial applications with instruments readily available from stock.
Compact design and robust construction make these instruments suitable for all applications in machine construction, process control, laboratory or quality and materials testing equipment.

There is an extraordinary range of instrument variants resulting from the fact that various mechanical and electrical connections can be combined with each other to almost any extent.

Structure
All wetted parts are made of stainless steel and are hermetically welded. Therefore there is no need for additional sealing material, which could possibly react with the pressure medium. The compact case is also made of stainless steel and provides IP 65 ingress protection (special versions up to IP 68).

The transmitters can be supplied with a non-stabilized direct voltage of 10 (14) … 30 V and provide standard industrial output signals.

The model S-11 with flush diaphragm is particularly suitable for the measurement of viscous fluids or media containing particulates that may clog the pressure connection of standard industrial transmitters. Thus, a trouble-free pressure measurement is ensured. Pressure transmitters with flush diaphragm are available in pressure ranges from 0 ... 0.1bar to 0 ... 600 bar. For applications with higher temperature requirements an integrated cooling element enables medium temperatures of up to 150 °C (302 °F).

For the pressure ranges from 0 … 0.25 bar up to 0 ... 1000 bar the pressure transmitters can be delivered for oxygen applications (technical safety check of the BAM, Bundesanstalt für Materialforschung und -prüfung available).

Specifications		Model S-10 / S-11										
Pressure ranges	bar	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10
Over pressure safety	bar	1	1.5	2	2	4	5	10	10	17	35	35
Burst pressure	bar	2	2	2.4	2.4	4.8	6	12	12	20.5	42	42
Pressure ranges	bar	16	25	40	60	100	160	250	400	600	1000 [1]	
Over pressure safety	bar	80	50	80	120	200	320	500	800	1200	1500	
Burst pressure	bar	96	96	400	550	800	1000	1200	1700 [2]	2400 [2]	3000	
	{Vacuum, gauge pressure, compound range, absolute pressure are available}											
	[1] Only Model S-10.											
	[2] For model S-11: the value specified in the table applies only when sealing is realised with the sealing ring underneath the hex. Otherwise max. 1500 bar applies.											
Materials												
■ Wetted parts		(other materials on request)										
➢ Model S-10		Stainless steel										
➢ Model S-11		Stainless steel {Hastelloy C4}										
		O-ring: NBR [3] {Viton or EPDM}										
■ Case		Stainless steel										
Internal transmission fluid [4]		Synthetic oil {Halocarbon oil for oxygen applications} [5]										
		{Listed by FDA for food industry}										
	[3] O-ring made of Viton or EPDM for Model S-11 with integrated cooling element.											
	[4] Not for S-10 with pressure ranges > 25 bar											
	[5] Media temperature for oxygen version: -30 ... +60 °C / -22 ... 140 °F (S-11 up to max. 40 bar). Cannot be manufactured for vacuum and absolute pressure ranges.											
Power supply U_B	U_B in DC V	$10 < U_B \leq 30$ (14 ... 30 with signal output 0 ... 10 V)										
Signal output and	R_A in Ohm	4 ... 20 mA, 2-wire	$R_A \leq (U_B - 10\ V) / 0.02\ A$									
maximum load R_A		0 ... 20 mA, 3-wire	$R_A \leq (U_B - 3\ V) / 0.02\ A$									
		{0 ... 5 V, 3-wire}	$R_A > 5{,}000$									
		{0 ... 10 V, 3-wire}	$R_A > 10{,}000$	{other signal outputs on request}								
Adjustability zero/span	%	± 10 via potentiometers in the instrument										
Response time (10 ... 90 %)	ms	≤ 1 (≤ 10 ms at medium temperatures below -30 °C for pressure ranges up to 25 bar or with flush diaphragm)										
Test of voltage strength	DC V	500										
	[6] NEC Class 02 power supply (low voltage and low current max. 100 VA even in fault conditions)											
Accuracy [7]	% of span	≤ 0.25 {0.125} [8] (BFSL)										
	% of span	≤ 0.5 {0.25} [8] (limit point calibration)										
	[7] Including linearity, hysteresis and repeatability. Limit point calibration in vertical mounting position with lower pressure connection.											
	[8] Accuracy { } for pressure ranges ≥ 0.25 bar											
Reproducibility	% of span	≤ 0.05										
1-year stability	% of span	≤ 0.2 (at reference conditions)										
Permissible temperature of												
■ Medium [9]		-30 ... +100 °C {-40 ... +125 °C}						-22 ... +212 °F {-40 ... +257 °F}				
		S-11 with cooling element: -20 ... +150 °C						S-11 with cooling element: -4 ... +302 °F				
■ Ambient [9]		-20 ... +80 °C						-4 ... +176 °F				
		S-11 with cooling element: -20 ... +80 °C						S-11 with cooling element: -4 ... +176 °F				
■ Storage [9]		-40 ... +100 °C						-40 ... +212 °F				
		S-11 with cooling element: -20 ... +100 °C						S-11 with cooling element: -4 ... +212°F				
	[9] Also complies with EN 50178, Tab. 7, Type C, Class 4KH Operation, 1K4 Storage, 1K3 Transport											
Compensated temp. range		0 ... +80 °C						32 ... +176 °F				
Temperature coefficients in compensated temp range												
■ Mean TC of zero	% of span	≤ 0.2 / 10 K (< 0.4 for pressure range < 250 mbar)										
■ Mean TC of range	% of span	≤ 0.2 / 10 K										
CE- conformitiy		89/336/EWG interference emission and immunity see EN 61 326, interference emission limit class A and B, 97/23/EG Pressure equipment directive (Module H)										
Shock resistance	g	1000 according to IEC 60068-2-27 (mechanical shock)										
Vibration resistance	g	20 according to IEC 60068-2-6 (vibration under resonance)										
Wiring protection		Protected against reverse polarity, overvoltage and short circuiting										
Weight	kg	Approx. 0.2 / Approx. 0.3 with option accuracy 0.25% of span due to longer case										

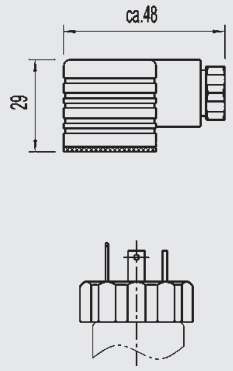
{ } Items in curved brackets { } are optional extras for additional price.

Dimensions in mm

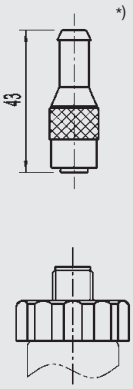
Electrical connections

Ingress Protection IP per IEC 60 529

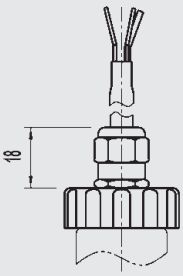
L-connector,
DIN EN 175301-803, Form A
for conducter cross section
up to max. 1.5 mm² ,
conducter outer diameter
6 - 8 mm,
IP 65
Oder code: A4



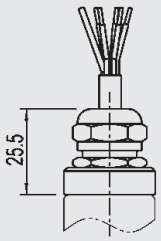
Circular connector
M 12x1, 4-pin,
IP 67
Order code: M4



Flying leads
conducter cross section up
to max. 0.5 mm² /
AWG 20 with end splices,
conducter outer diameter
6.8 mm, IP 67
Order code: DL



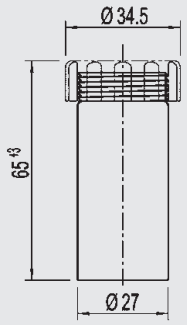
Flying leads, zero/span not adjustable
,
conducter cross section up to max.
0.5 mm² / AWG 20 with end splices,
conducter outer diameter 6.8 mm,
IP 68
Order code: EM



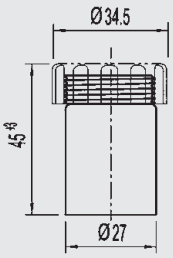
Others on request

Case

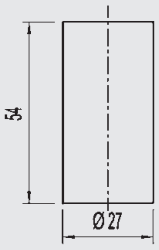
Case at 0.25 %
accuracy



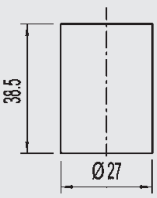
Case at 0.5 %
accuracy



Case at 0.25 %
accuracy



Case at 0.5 %
accuracy



Pressure connections S-10

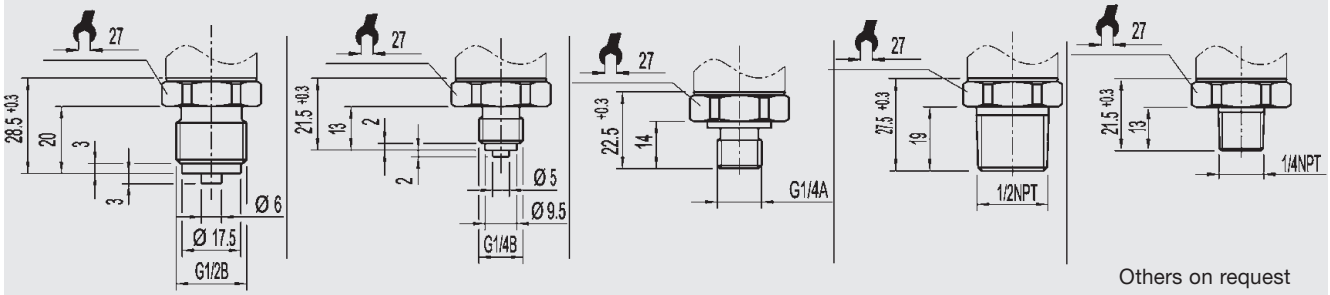
G 1/2
EN 837
Order code: GD

G 1/4
EN 837
Order code: GB

G 1/4
DIN 3852-E
Order code: HD

1/ 2 NPT
per „Nominal size for US
standard tapered
pipe thread NPT“
Order code: ND

1/4 NPT
per „Nominal size for
US standard tapered
pipe thread NPT“
Order code: NB



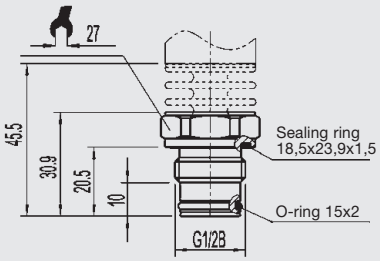
Others on request

*) Connectors are not included in delivery

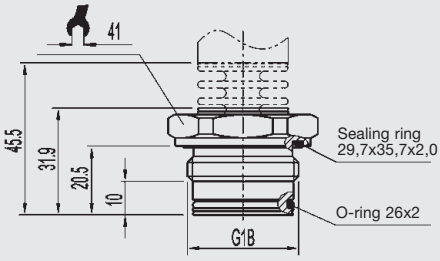
Dimensions in mm

Pressure connections S-11, flush diaphragm

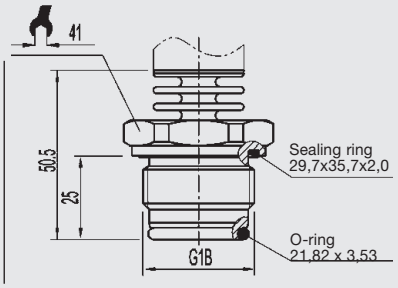
G 1/2 B
with or without cooling element
0 ... 2.5 up to 0 ... 600 bar
Order code: 86



G 1B
with or without cooling element
0 ... 0.1 up to 0 ... 1.6 bar
Order code: 85



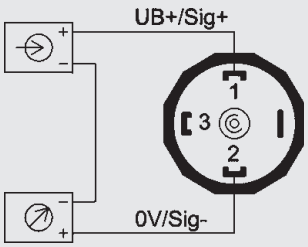
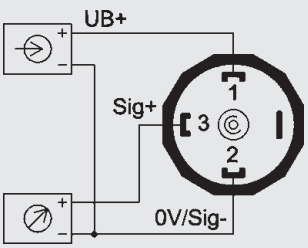
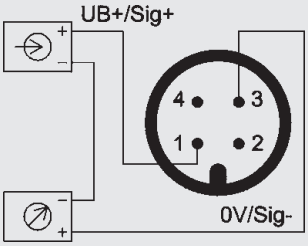
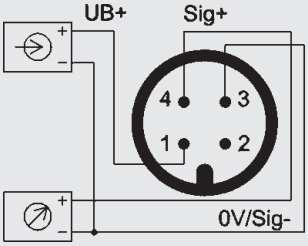
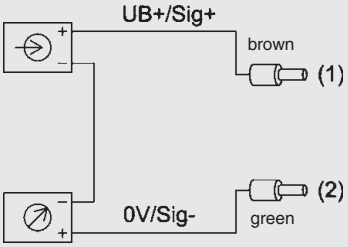
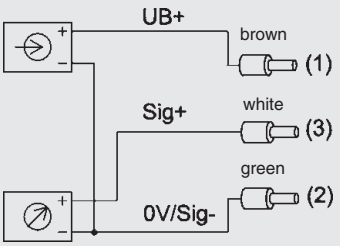
G 1B
acc. EHEDG **)
with cooling element , up to 150 °C
up to 25 bar
Order code: 84



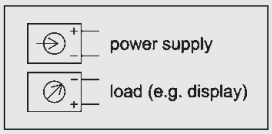
Others on request

**) European Hygienic Equipment Design Group

Wiring details

	2-wire	3-wire
L-Connector, DIN EN 175301-803, Form A		
Circular connector M 12x1		
Flying leads with 1.5 m of vented cable		

Legend:



Accessories

	Order-No.	
		
		S-11
	11 92 299	G 1/2 Weld-on adaptor
	11 92 264	G 1 Weld-on adaptor
		
		S-10
	90 92 099	G 1/2 sealing
	90 92 161	G 1/4 sealing
		
		S-10
	16 04 791	G 1/2 Cooling element
		
		S-10
	90 92 005	G 1/2 Adaptor with insert filter
		
		S-10
	90 91 262	G 1/2 Throttle, max. 400 bar

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.

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