

Pressure transmitter for general applications

Model S-10, standard version

Model S-11, flush diaphragm

WIKA Data Sheet PE 81.01

Applications

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

Special Features

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

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).



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

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 ... 0.1 bar 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}										
Materials												
■ Wetted parts		Stainless steel (other materials see WIKA diaphragm seal programm)										
➤ 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		Synthetic oil,										
		only for pressure ranges up to 0 ... 25 bar or for Model S-11 (flush diaphragm) units										
		{Halocarbon oil for oxygen applications} ⁴⁾										
		{Listed by FDA for food industry}										
Power supply U _B	DC V	10 < U _B ≤ 30 (14 ... 30 with signal output 0 ... 10 V)										
Signal output and maximum load R _A		4 ... 20 mA, 2-wire R _A ≤ (U _B - 10 V) / 0.02 A with R _A in Ohm and U _B in Volt										
		0 ... 20 mA, 3-wire R _A ≤ (U _B - 3 V) / 0.02 A with R _A in Ohm and U _B in Volt										
		{0 ... 5 V, 3wire} R _A > 5 kOhm										
		{0 ... 10 V, 3-wire} R _A >10 kOhm {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)										
Accuracy ⁵⁾	% of span	≤ 0.5 {0.25} ⁶⁾ (limit point calibration)										
	% of span	≤ 0.25 {0.125} ⁶⁾ (BFSL)										
Hysteresis	% of span	≤ 0.1										
Repeatability	% of span	≤ 0.05										
1-year stability	% of span	≤ 0.2 (at reference conditions)										
Permissible temperature of												
■ Medium		-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		-20 ... +80 °C						-4 ... +176 °F				
		S-11 with cooling element: -20 ... +80 °C						S-11 with cooling element: -4 ... +176 °F				
■ Storage		-40 ... +100 °C						-40 ... +212 °F				
		S-11 with cooling element: -20 ... +100 °C						S-11 with cooling element: -4 ... +212°F				
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-conformity		89/336/EEG interference emission and immunity see EN 61 326										
		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										
Ingress protection per		Per IEC 60529 / EN 60529, see page 3										
Weight	kg	Approx. 0.2										
	kg	Approx. 0.3 with option accuracy 0.25% of span due to longer case										

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.

3) O-ring made of Viton or EPDM for Model S-11 with integrated cooling element

4) Media temperature for oxygen version : -30 ... +60 °C / -22 ... 140 °F (S-11 up to max. 160 bar).

Cannot be manufactured for absolute pressure ranges < 1 bar abs.

5) Including linearity, hysteresis and reproducibility.

Limit point calibration in vertical mounting position with lower pressure connection.

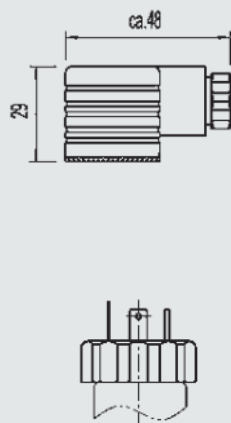
6) Accuracy 0.25 %: for pressure ranges 0 ... 0.25 bar up to 0 ... 1000 bar.

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

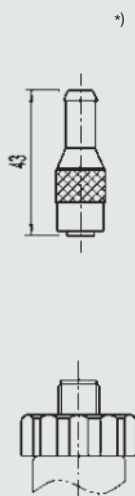
Dimensions in mm

Electrical connections

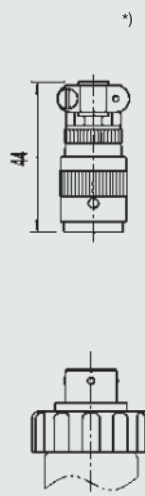
L-connector,
DIN EN 175301-803,
IP 65
Order code: A4



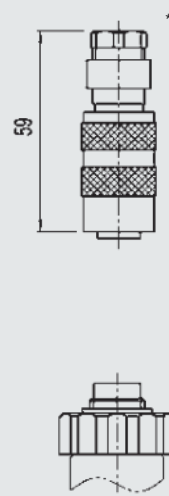
Circular connector
M 12x1, 4-pin,
IP 67
Order code: M4



MIL connector,
6-pin,
IP 67
Order code: C6



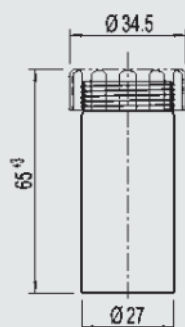
Circular connector,
M 16x0.75, 5-pin,
IP 65
Order code: B5



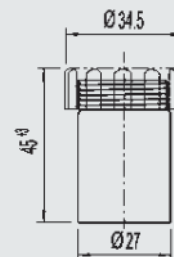
Others on request

Case

Case at 0.25 %
accuracy

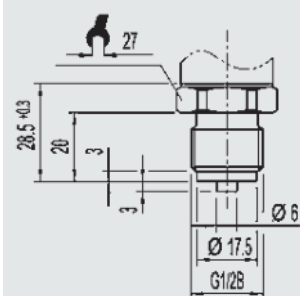


Case at 0.5 %
accuracy

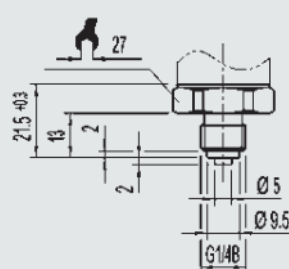


Pressure connections S-10

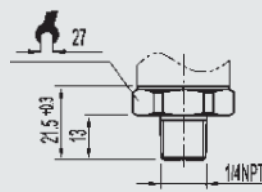
G 1/2
EN 837
Order code: GD



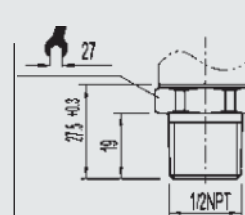
G 1/4
EN 837
Order code: GB



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



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



Others on request

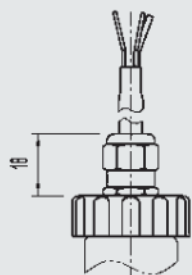
For tapped holes and welding sockets please see data sheet IN 00.14 or www.wika.de/download

*) Connectors are not included in delivery

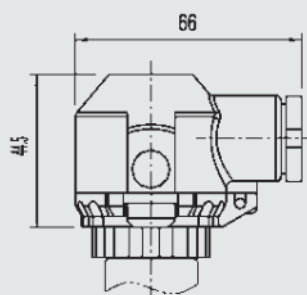
Dimensions in mm

Electrical connections

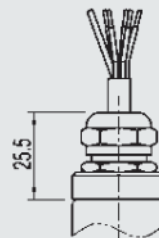
Flying leads
IP 67
Order code: DL



Snap Cap max. rotatable by 300°
IP 67
Order code: NL



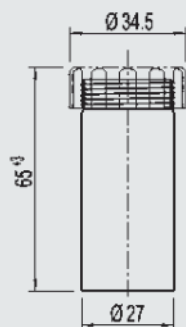
Flying leads, zero/span not adjustable, IP 68
Order code: EM



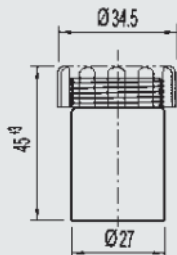
Others on request

Case

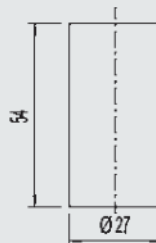
Case at 0.25 % accuracy



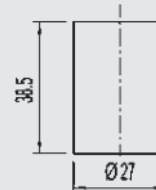
Case at 0.5 % accuracy



Case at 0.25 % accuracy

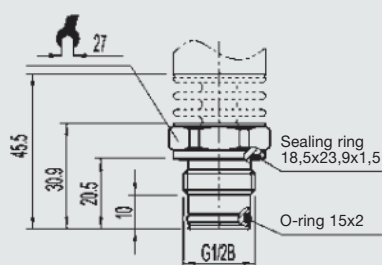


Case at 0.5 % accuracy

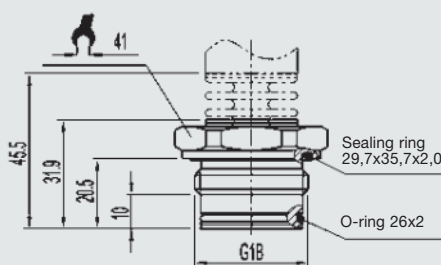


Pressure connections S-11, flush diaphragm

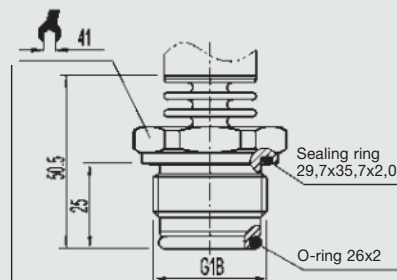
G 1/2 B
with or without cooling element
0 ... 2.5 up to 0 ... 600 bar
Order code: 86



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



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



Others on request

For tapped holes and welding sockets please see data sheet IN 00.14 or www.wika.de/download

¹⁾ European Hygienic Equipment Design Group

Wiring details

	2-wire system	3-wire system
L-connector		
Circular connector M 12x1		
MIL-connector		
Circular connector M 16x0.75		
Flying leads with 1.5 m of vented cable		
Snap Cap with internal clamp of 1.5 mm² max.		
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 WIK-sealing
	90 92 161	G 1/4 WIK-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

Further informations

You can obtain further information (data sheets, instructions, etc.) via Internet address www.wika.de.



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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