

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

Special Features

- Pressure ranges from 0 ... 0.1bar to 0 ... 1000 bar
- Various industrial standard signal outputs
- Wiring with connector, flying leads or Snap Cap
- Stock programm 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 ... 100 mbar 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

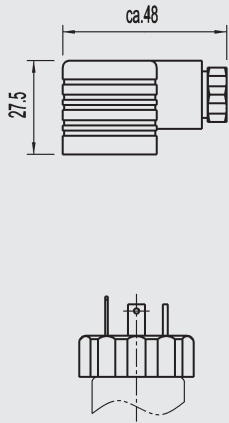
Pressure ranges	bar	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10
Over pressure safety	bar	1	1.5	2	2	4	5	10	10	17	35	35
Burst pressure	bar	2	2	2.4	2.4	4.8	6	12	12	20.5	42	42
Pressure ranges	bar	16	25	40	60	100	160	250	400	600	1000	
Over pressure safety	bar	80	50	80	120	200	320	500	800	1200	1500	
Burst pressure	bar	96	250	400	550	800	1000	1200	1700	2400	3000	
		{Absolute pressure: 0 ... 0.25 bar abs to 0 ... 16 bar abs}										
		{Special pressure range 800 ... 1200 mbar abs}										
Materials												
■ Wetted parts		Stainless steel (other materials see WIKA chemical seal programm)										
> Model S-10		Stainless steel										
> Model S-11		Stainless steel {Hastelloy C4}										
		O-ring: NBR ¹⁾ {Viton or EPDM}										
■ Case		Stainless steel										
Internal transmission fluid		Synthetic oil,										
		only for pressure ranges up to 0 ... 16 bar or for Model S-11 (flush diaphragm) units										
		{Halocarbon oil for oxygen applications} ²⁾										
		{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 16 bar or with flush diaphragm)										
Accuracy ¹⁾	% of span	≤ 0.5 {0.25} ³⁾ (limit point calibration)										
	% of span	≤ 0.25 {0.125} ³⁾ (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										
		S-11 with cooling element: -20 ... +80 °C					S-11 with cooling element: -4 ... +176 °F					
■ Storage		-40 ... +100 °C										
		S-11 with cooling element: -20 ... +100 °C					S-11 with cooling element: -4 ... +212 °F					
■ Compensated		0 ... +80 °C										
							0 ... +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/EWG interference emission and immunity see EN 61 326										
		97/23/EG Pressure equipment directive, Appendix 1										
Shock resistance	g	1000 according to IEC 770 (mechanical shock)										
Vibration resistance	g	20 according to IEC 770 (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) O-ring made of Viton or EPDM for Model S-11 with integrated cooling element
 2) The oxygen version must not be operated under medium temperatures higher than 60 °C (140 °F). Cannot be manufactured for absolute pressure ranges < 1 bar abs.
 3) Accuracy 0.25 %: for pressure ranges 0 ... 0.25 bar up to 0 ... 1000 bar.
 *) Calibrated in vertical mounting position with lower pressure connection
 {} Items in curved brackets {} are optional extras for additional price.

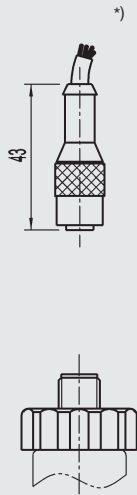
Dimensions in mm

Electrical connections

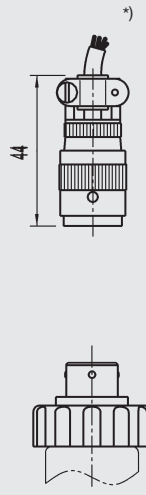
L-connector,
DIN EN 175301-803,
IP 65
Order code: A4



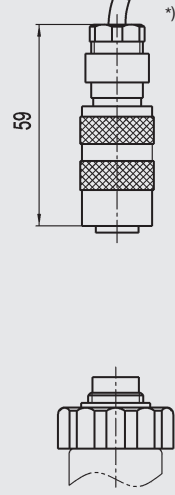
Circular connector
M 12x1, 4-pin,
IP 67
Order code: M4



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



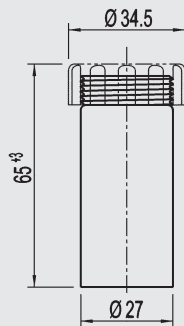
Circular connector,
M 16x0.75, 6-pin,
IP 65
Order code: B5



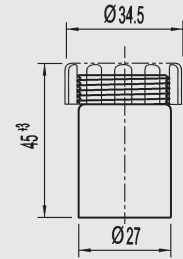
Others on request

Case

Case at 0.25 %
accuracy

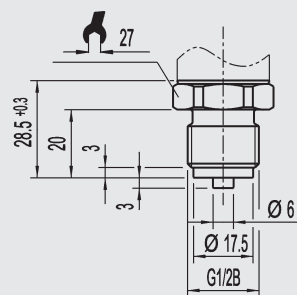


Case at 0.5 %
accuracy

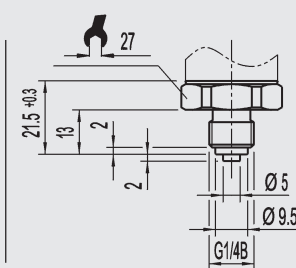


Pressure connections S-10

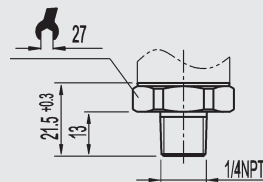
G 1/2
EN 837
Order code: GD



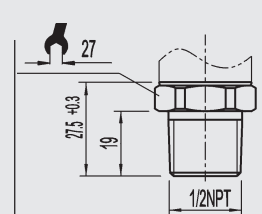
G 1/4
EN 837
Order code: GB



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

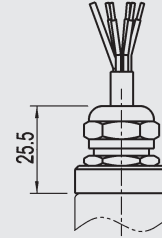
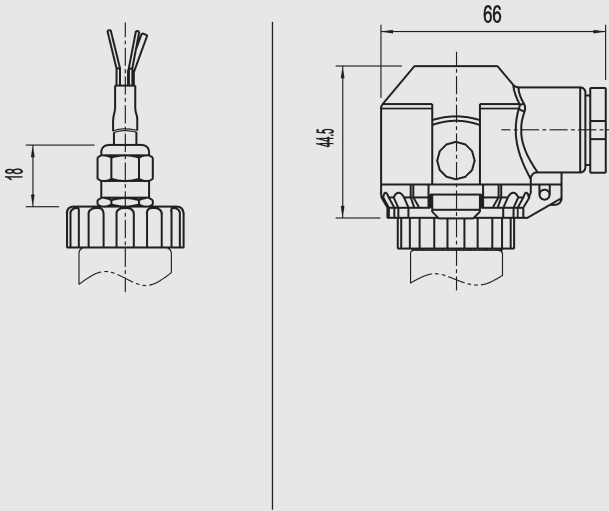
Dimensions in mm

Electrical connections

Flying leads
IP 67
Order code: DL

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

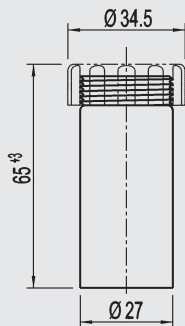
Flying leads, zero/span not
adustable, IP 68
Order code: EM



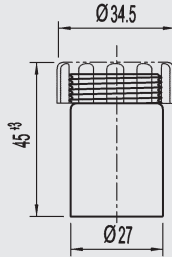
Others on request

Case

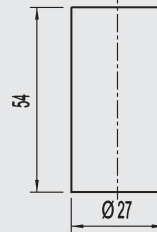
Case at 0.25 %
accuracy



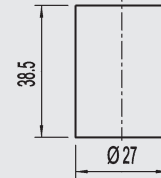
Case at 0.5 %
accuracy



Case at 0.25 %
accuracy



Case at 0.5 %
accuracy

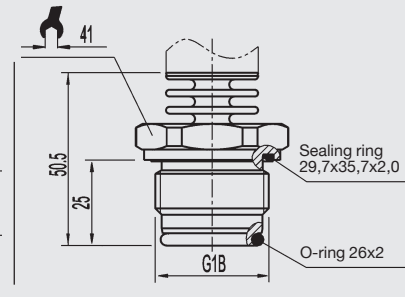
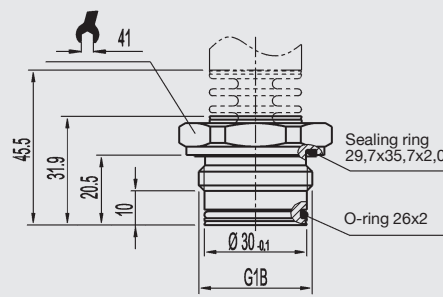
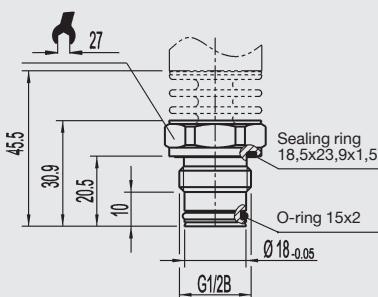


Pressure connections S-11, flush diaphragm

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

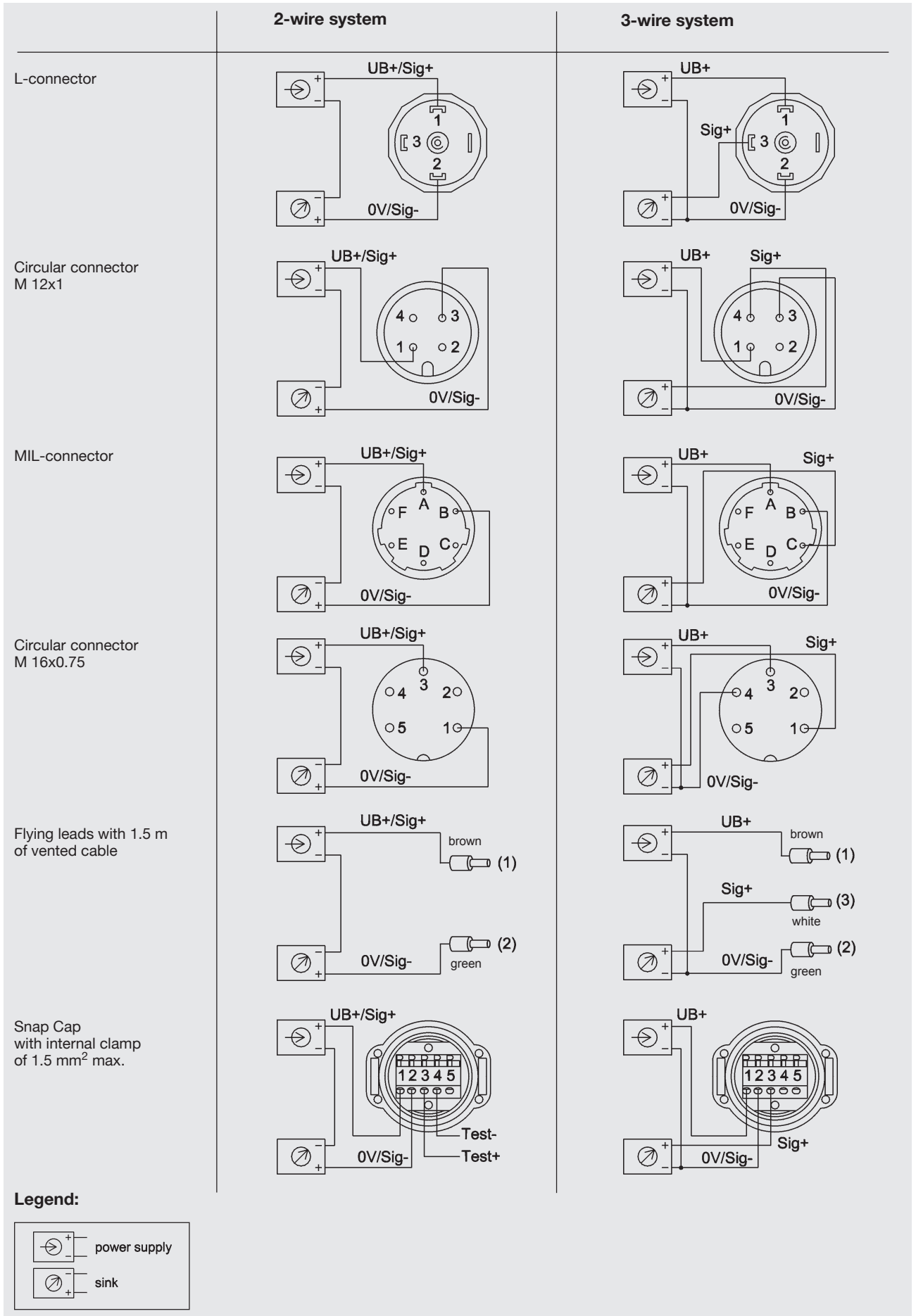


Others on request






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



Accessories

Order-No.		
	11 92 299	G 1/2 Weld-on adaptor
	11 92 264	G 1 Weld-on adaptor
	90 92 099	G 1/2 WIKA-sealing
	90 92 161	G 1/4 WIKA-sealing
	16 04 791	G 1/2 Cooling element for S-10
	90 92 005	G 1/2 Adaptor with insert filter
	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.



The screenshot shows the Wika website interface. On the left, there's a navigation menu with categories like 'Product News', 'Customer Notices', 'Local & National News', 'International News', and 'OTM News'. The main content area features a 'MORE TOP STORIES' section with several articles:

- WIKA CD-Sensik P f e v i o w** (October 7, 2002): Discusses the new Wika CD and users' opportunity to specify pressure measurement. The configuration tool enables customisation created from end-user's requirements.
- WIKA'S BSEXX-D1 All-Welded System** (July 1, 2002): Mentions the new Wika D1 All-Welded System (WSE) is 23% 16 and welded diaphragm case, confirmed to gain popularity with the use of this new system because of typical conditions. What is the maximum temperature this assembly can do.
- WIKA L801.22 IN-LINE SEAL** (September 15, 2002): The Wika L801.22 IN-LINE SEAL which has a complete seal within housed at the diaphragm, is guaranteed to be the better solution for the industrial diaphragm transmitters for top media and hard to contact media.

On the right side, there's a section titled 'Operating instructions' with a CE mark and an image of a pressure transmitter.

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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