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Industrial Pressure Transmitter
Model S-10, S-11

Applications

- Hydraulics and pneumatics
- Test equipment
- Pump and compressor control
- Liquid level measurement

Special Features

- Standard ranges available from stock
- 4-20 mA 2-wire output signal, others available
- Highly resistant to pressure spikes and vibration
- Stainless steel case and wetted parts
- Can be assembled to diaphragm seals for special applications



Left: S-10 with NPT process connection
Center: S-11 with flush diaphragm process connection
Right: S-11 with flush diaphragm process connection and integral cooling element

Description

WIKA S-10 and S-11 pressure transmitters are precision engineered to fit most industrial pressure measurement applications. The compact, rugged design make these instruments suitable for applications including hydraulics and pneumatics, vacuum, test equipment, liquid level measurement, press control, compressor control, pump protection and numerous other processing and control operations. A wide range of electrical connection and process connection options are available to meet almost any requirement.

Rugged construction

The S-10 features an all-welded stainless steel measuring cell for improved media compatibility. There are no internal soft sealing materials that may react with the media or deteriorate over time. The compact case is also made of stainless steel and is available with environmental protection ratings up to NEMA 6P / IP 68.

The S-11 transmitters feature a flush diaphragm process connection. They are specifically designed for the measurement of viscous fluids or media containing solids that may clog a NPT process connection. Flush diaphragm pressure transmitters are available in pressure range from 50INWC to 8000PSI. For high temperature media an integral cooling element is available on the S-11. This option increases the maximum media temperature to 300°F.

Each instrument undergoes extensive quality control testing and calibration to achieve an accuracy of ≤ 0.25% full scale. The printed circuit boards use state-of-the-art surface mount technology and are potted in silicone gel for protection against mechanical shock, vibration, and moisture. Each is individually temperature compensated to assure accuracy and long-term stability even when exposed to severe ambient temperature variations.

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Specifications — Model S-10 / S-11

Pressure range	50INWC	5PSI	10PSI	25PSI	30PSI	60PSI	100PSI	160PSI	200PSI
Maximum pressure*	30PSI	72PSI	72PSI	72PSI	72PSI	240PSI	240PSI	500PSI	500PSI
Burst pressure**	30PSI	87PSI	87PSI	87PSI	87PSI	290PSI	290PSI	600PSI	600PSI
Pressure range	300PSI	500PSI	1000PSI	2000PSI	3000PSI	5000PSI	8000PSI	10000PSI[1]	15000PSI[1]
Maximum pressure*	500PSI	1160PSI	2900PSI	4640PSI	7250PSI	11,600PSI	17,400PSI	21,750PSI	21,750PSI
Burst pressure**	600PSI	5800PSI	11,600PSI	14,500PSI	17,400PSI	24,650PSI	34,800PSI	43,500PSI	43,500PSI

{vacuum, gauge pressure, compound ranges, and absolute pressure references are available}

[1)] Ranges only available with Model S-10

[2)] For Model S-11 the burst pressure is limited to 21,000PSI unless the pressure seal is accomplished by using the sealing ring underneath the hex.

*Pressure applied up to the maximum rating will cause no permanent change in specifications but may lead to zero and span shifts

**Exceeding the burst pressure may result in destruction of the transmitter and possible loss of media

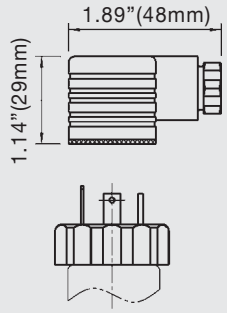
Materials				
■ Wetted parts		(other materials see WIKA diaphragm seal program)		
➢ Model S-10		Stainless steel		
➢ Model S-11		Stainless steel {Hastelloy C4}		
		O-ring: NBR [3)] {Viton or EPDM}		
■ Case		Stainless steel		
Internal transmission fluid [4)]		Synthetic oil {Halocarbon oil for oxygen applications} [5)]		
		{Listed by FDA for food applications}		
	[3)] O-ring made of Viton or EPDM for Model S-11 with integral cooling element.			
	[4)] Not available with Model S-10 in pressure ranges >300 PSI.			
	[5)] Media temperature for oxygen version: -22 ... 140 °F / -30 ... +60 °C. Oxygen version is not available in vacuum and absolute pressure ranges or with S-11 > 500 PSI			
Power supply U_B [6)]	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 available}
Adjustability zero/span	%	± 10 using potentiometers inside the instrument		
Response time (10 ... 90 %)	ms	≤ 1 (≤ 10 ms at media temperatures below –22°F (-30°C) for ranges < 300 PSI		
		or with flush diaphragm process connection)		
Isolation voltage	DC V	500		
	[6)] NEC Class 02 power supply (low voltage and low current max. 100 VA even under 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 performed in vertical mounting position with pressure connection facing down.			
	[8)] Improved accuracy is available for pressure ranges ≥ 100 INWC			
Repeatability	% of span	≤ 0.05		
1-year stability	% of span	≤ 0.2	(at reference conditions)	
Permissible temperature of				
■ Medium [9)]		-22 ... +212 °F {-40 ... +257 °F}		-30 ... +100 °C {-40 ... +125 °C}
		S-11 with cooling element: -4 ... +302 °F		S-11 with cooling element: -20 ... +150 °C
■ Ambient [9)]		-4 ... +176 °F		-20 ... +80 °C
		S-11 with cooling element: -4 ... +176 °F		S-11 with cooling element: -20 ... +80 °C
■ Storage [9)]		-40 ... +212 °F		-40 ... +100 °C
		S-11 with cooling element: -4 ... +212°F		S-11 with cooling element: -20 ... +100 °C
	[9)] Also complies with EN 50178, Tab. 7, Type C, Class 4KH Operation, 1K4 Storage, 1K3 Transport			
Compensated temperature range		32 ... +176 °F		0 ... +80 °C
Temperature coefficients (TC) within				
compensated temp range:				
■ Mean TC of zero	% of span	≤ 0.2 / 10 K (< 0.4 for pressure range < 100 INWC)		
■ 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 circuit		
Weight	lb	Approx. 0.4		

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

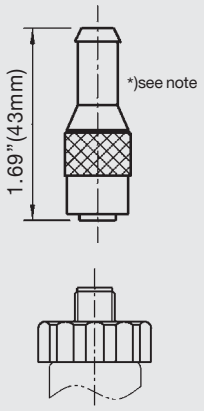
Dimensions in inches(mm)

Electrical connections

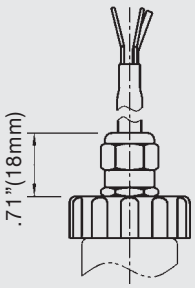
L-connector, DIN EN 175301-803, Form A (DIN 43 650) for conductor cross section up to max. 1.5 mm² , conductor outer diameter 0.3“ (6-8 mm), NEMA 5 / IP 65
Order code: A4



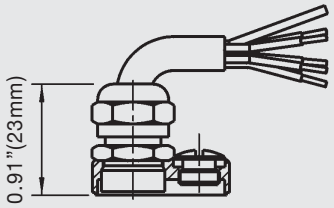
Circular connector
M 12x1, 5-pin, NEMA 4 / IP 67
Order code: M5



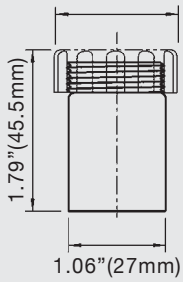
Flying leads
conductor cross section up to max. 0.5 mm² / AWG 20 with end splices, conductor outer diameter 6.8 mm, NEMA 4 / IP 67
Order code: DL

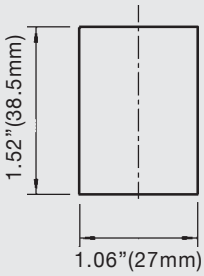


Cable with free ends, adjustable zero and span
conductor cross section up to max. 0.5 mm² / AWG 20 with end splices, conductor outer diameter 6.8 mm, NEMA 6 P / IP 68
Order code: XM



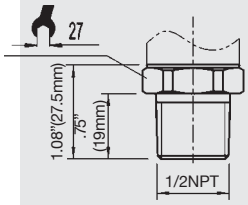
Case



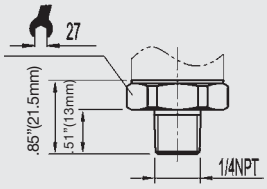


S-10 pressure connections (others available)

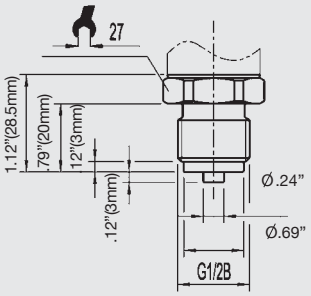
1/2 NPT male
Order code: ND



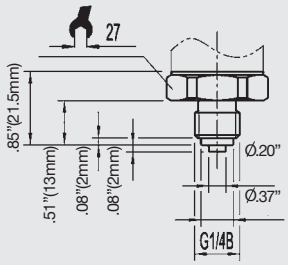
1/4 NPT male
Order code: NB



G1/2B male
Order code: GD

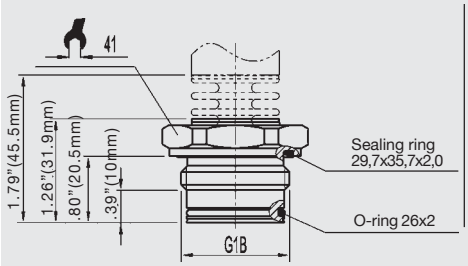


G1/4B male
Order code: GB

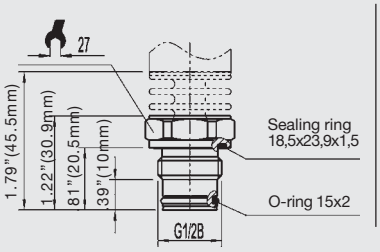


S-11 flush diaphragm pressure connections

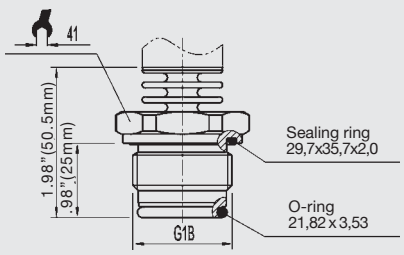
G 1B
with or without cooling element
50 INWC to 30 PSI
Order code: 85



G 1/2 B
with or without cooling element
50 PSI to 8000 PSI
Order code: 86



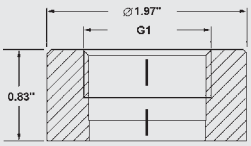
G1B according to EHEDG **)
with cooling element , up to 302°F (150°C)
100 INWC to 250 PSI
Order code: 84



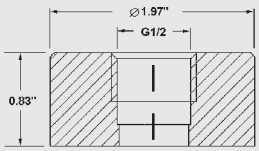
** European Hygenic Equipment Design Group

*) Mating connector not included

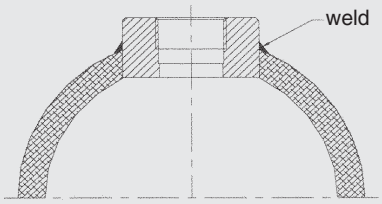
Matching P-1 weld insert adapters for S-11 pressure transmitters



P-1 G1 weld insert adapter
Part # 1206974
for pressure ranges ≤ 30 PSI

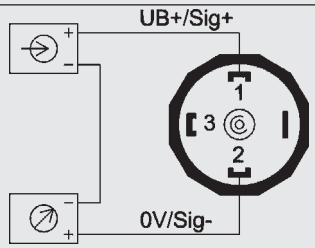
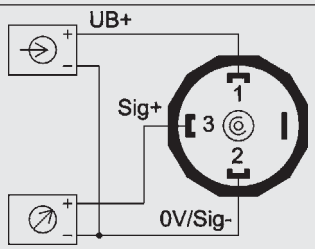
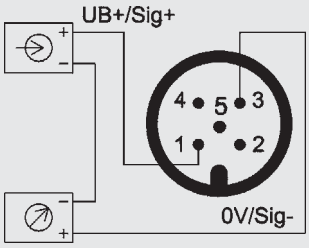
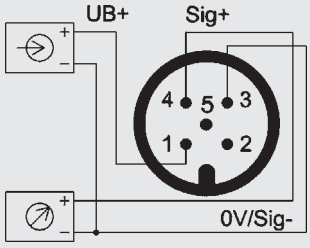
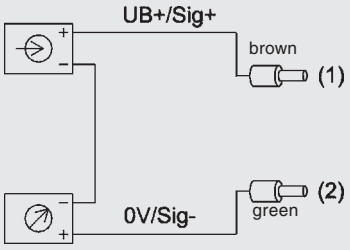
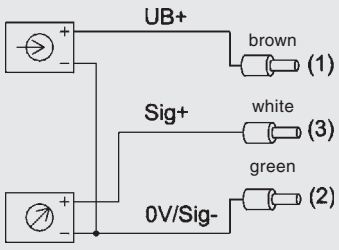


P-1 G1/2 weld insert adapter
Part # 1097008
for pressure ranges ≥ 50 PSI



Cross section view of P-1
adapter installed in pipe.

Wiring

	2-wire system	3-wire system
L-Connector, DIN EN 175301-803, Form A (DIN 43 650)		
M12x1 Circular connector 5 pin		
Vented cable with free ends		

Legend:



Sig+ output signal positive
UB+ power supply positive
0V power supply negative
Sig - output signal negative

Specifications and dimensions given in this data sheet 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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