General Purpose Pressure Transmitters
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 makes 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 transmitter features a flush diaphragm process connection. The S-11 is 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 ranges from 50 InWC to 8,000 psi. 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.

Specifications Type S-10 / S-11

Pressure range	50 InWC	5 psi	10 psi	25 psi	30 psi	60 psi	100 psi	160 psi	200 psi
Maximum pressure*	14 psi	29 psi	58 psi	145 psi	145 psi	240 psi	500 psi	1,160 psi	1,160 psi
Burst pressure**	29 psi	35 psi	69 psi	170 psi	170 psi	290 psi	600 psi	1,390 psi	1,390 psi
Pressure range	300 psi	500 psi	1,000 psi	2,000 psi	3,000 psi	5,000 psi	8,000 psi	10,000 psi[1]	15,000 psi[1]
Maximum pressure*	1,160 psi	1,160 psi	1,740 psi	4,600 psi	7,200 psi	11,600 psi	17,400 psi	17,400 psi	21,750 psi
Burst pressure**	1,390 psi	5,800 psi	7,970 psi	14,500 psi	17,400 psi	24,650 psi	34,800 psi	34,800 psi	43,500 psi

{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
		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: -4 ... +140 °F (-20....+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} $R_A > 5000$
		{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

Non-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

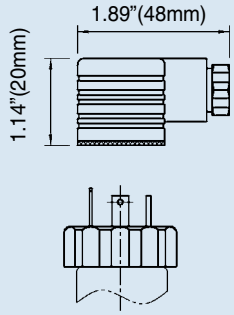
Compensated temperature range		32 ... +176 °F	0 ... +80 °C
Temperature coefficients (TC) within			
compensated temp range:			
■ Mean TC of zero	% of span	≤ 0.2 / 10 K (< 0.4 for pressure range ≤ 100 InWC)	
■ Mean TC of range	% of span	≤ 0.2 / 10 K	
CE - conformity			
■ Pressure equipment directive		97/23/EC	
■ EMC directive		2004/108/EEC, EN 61 326 Emission Group (Group 1, Class B) and	
		Immunity)industrial locations	
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.

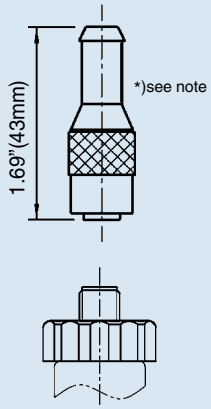
Dimensions in inches(mm)

Electrical connections

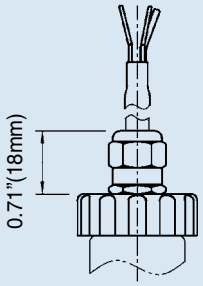
L-connector, DIN EN 175301-803, Form A (DIN 43 650) for conductor cross section up to max. 1.5 mm², conductor outer diameter 0.3“ (6-8 mm), NEMA 5 / IP 65
Order code: A4



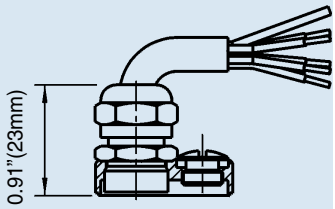
Circular connector M 12x1, 5 pin, NEMA 4 / IP 67
Order code: M5



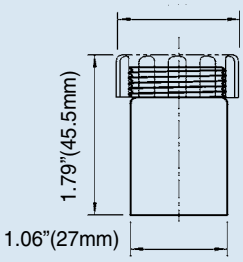
Cable with free ends conductor cross section up to max. 0.5 mm² / AWG 20 with end splices, conductor outer diameter 6.8 mm, NEMA 4 / IP 67
Order code: DL

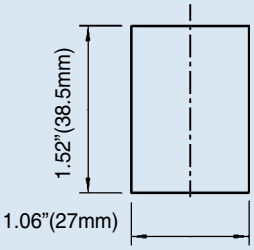


Cable with free ends, adjustable zero and span conductor cross section up to max. 0.5 mm² / AWG 20 with end splices, conductor outer diameter 6.8 mm, NEMA 6 P / IP 68
Order code: XM



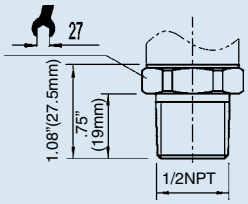
Case



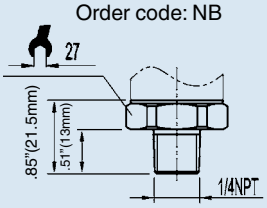


S-10 pressure connections (others available)

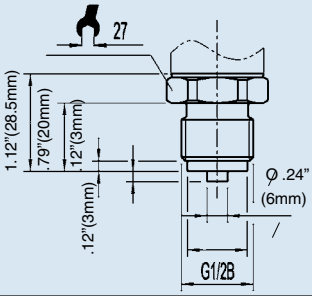
1/2 NPT male
Order code: ND



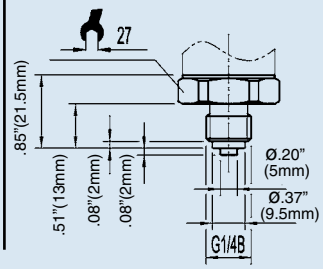
1/4 NPT male
Order code: NB



G1/2B male
Order code: GD

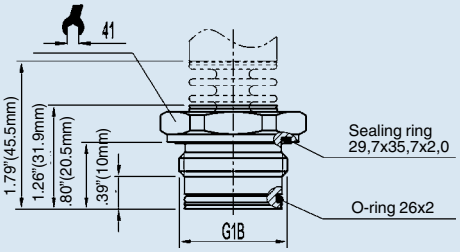


G1/4B male
Order code: GB

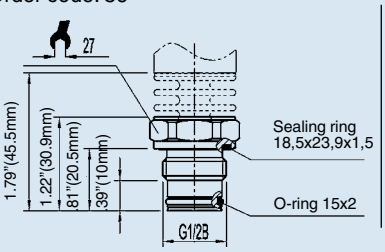


S-11 flush diaphragm pressure connections

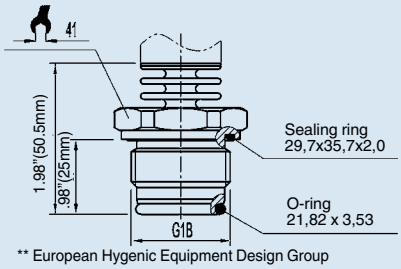
G 1 B
with or without cooling element
50 InWC to 25 psi
Order code: 85



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



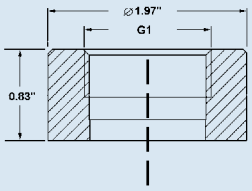
G1B according to EHEDG **)
with cooling element , up to 302°F (150°C)
100 InWC to 250 psi
Order code: 84



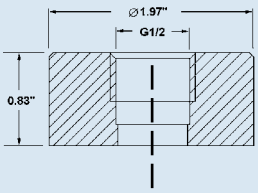
** European Hygenic Equipment Design Group

*) Mating connector not included

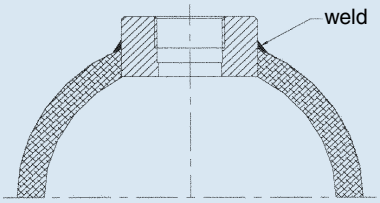
Matching P-1 weld insert adapters for S-11 pressure transmitters



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

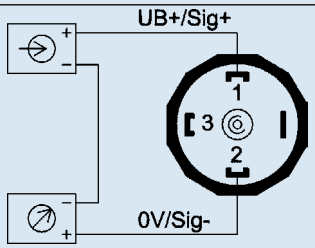
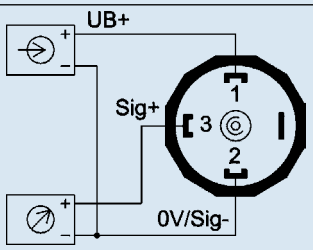
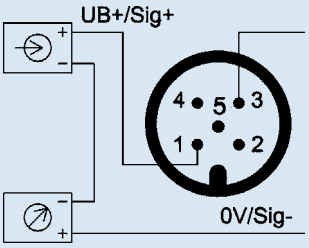
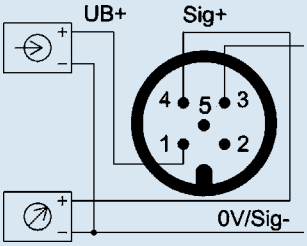
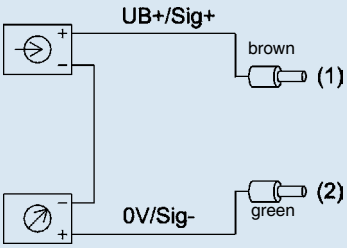
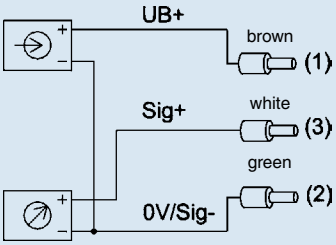


P-1 G1/2 weld insert adapter
Part # 1097008
for pressure ranges ≥ 50 psi



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

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