

# Industrial Pressure Transmitters

## Type 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

WIKAI 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  $\leq 0.25\%$  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.

[Datasheet: S-10, S-11](#)

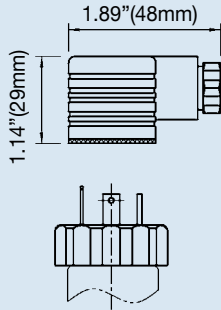
Specifications		Model S-10 / S-11							
<b>Pressure range</b>	50inWC	5psi	10psi	25psi	30psi	60psi	100psi	160psi	200psi
<b>Maximum pressure*</b>	14psi	29psi	58psi	145psi	145psi	240psi	500psi	1160psi	1160psi
<b>Burst pressure**</b>	29psi	35psi	69psi	170psi	170psi	290psi	600psi	1390psi	1390psi
<b>Pressure range</b>	300psi	500psi	1000psi	2000psi	3000psi	5000psi	8000psi	10000psi <sup>1)</sup>	15000psi <sup>1)</sup>
<b>Maximum pressure*</b>	1160psi	1160psi	1740psi	4600psi	7200psi	11,600psi	17,400psi	17,400psi	21,750psi
<b>Burst pressure**</b>	1390psi	5800psi	7970psi	14,500psi	17,400psi	24,650psi	34,800psi	34,800psi	43,500psi
{vacuum, gauge pressure, compound ranges, and absolute pressure references are available}									
<sup>1)</sup> Ranges only available with Model S-10									
<sup>2)</sup> 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									
<b>Materials</b>									
<ul style="list-style-type: none"> <li>■ Wetted parts <ul style="list-style-type: none"> <li>➢ Model S-10</li> <li>➢ Model S-11</li> </ul> </li> <li>■ Case</li> </ul>		(other materials see WIKA diaphragm seal program)							
Internal transmission fluid <sup>4)</sup>		Synthetic oil {Halocarbon oil for oxygen applications} <sup>5)</sup> {Listed by FDA for food applications}}							
<sup>3)</sup> O-ring made of Viton or EPDM for Model S-11 with integral cooling element.									
<sup>4)</sup> Not available with Model S-10 in pressure ranges >300 psi.									
<sup>5)</sup> 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 <sub>B</sub> <sup>6)</sup>	U <sub>B</sub> in DC V	10 < U <sub>B</sub> ≤ 30 (14 ... 30 with signal output 0 ... 10 V)							
Signal output and maximum load R <sub>A</sub>	R <sub>A</sub> in Ohm	4 ... 20 mA, 2-wire R <sub>A</sub> ≤ (U <sub>B</sub> - 10 V) / 0.02 A 0 ... 20 mA, 3-wire R <sub>A</sub> ≤ (U <sub>B</sub> - 3 V) / 0.02 A {0 ... 5 V, 3-wire} R <sub>A</sub> > 5000 {0 ... 10 V, 3-wire} R <sub>A</sub> > 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							
<sup>6)</sup> NEC Class 02 power supply (low voltage and low current max. 100 VA even under fault conditions)									
Accuracy <sup>7)</sup>	% of span	≤ 0.25 {0.125} <sup>8)</sup> (BFSL)							
	% of span	≤ 0.5 {0.25} <sup>8)</sup> (limit point calibration)							
<sup>7)</sup> Including linearity, hysteresis and repeatability.									
Limit point calibration performed in vertical mounting position with pressure connection facing down.									
<sup>8)</sup> 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									
<ul style="list-style-type: none"> <li>■ Medium <sup>9)</sup></li> <li>■ Ambient <sup>9)</sup></li> <li>■ Storage <sup>9)</sup></li> </ul>		-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			
		-4 ... +176 °F				-20 ... +80 °C			
		S-11 with cooling element: -4 ... +176 °F				S-11 with cooling element: -20 ... +80 °C			
		-40 ... +212 °F				-40 ... +100 °C			
		S-11 with cooling element: -4 ... +212 °F				S-11 with cooling element: -20 ... +100 °C			
<sup>9)</sup> 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:									
<ul style="list-style-type: none"> <li>■ Mean TC of zero</li> <li>■ Mean TC of range</li> </ul>	% of span	≤ 0.2 / 10 K (< 0.4 for pressure range ≤ 100 inWC)							
	% of span	≤ 0.2 / 10 K							
CE - conformity		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.

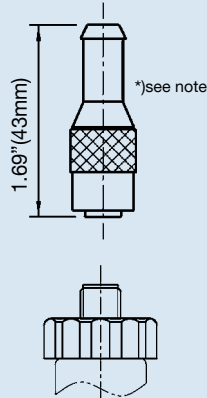
## Dimensions in inches(mm)

### Electrical connections

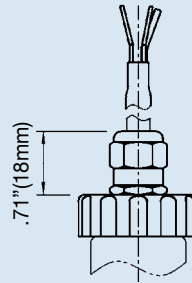
L-connector, DIN EN 175301-803, Form A (DIN 43 650) for conductor cross section up to max. 1.5 mm<sup>2</sup>, conductor outer diameter 0.3" (6-8 mm), NEMA 5 / IP 65  
Order code: A4



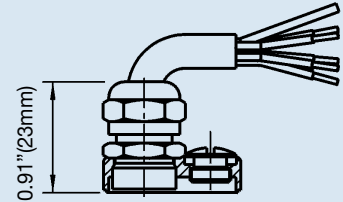
Circular connector M 12x1, 5-pin, NEMA 4 / IP 67  
Order code: M5



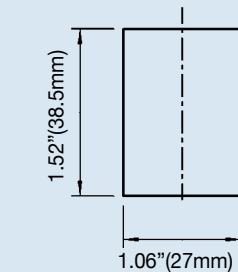
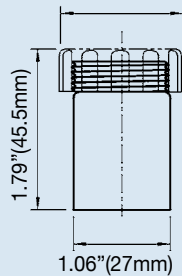
Cable with free ends conductor cross section up to max. 0.5 mm<sup>2</sup> / AWG 20 with end splices, conductor outer diameter 6.8 mm, NEMA 4 / IP 67  
Order code: DL



Cable with free ends, adjustable zero and span conductor cross section up to max. 0.5 mm<sup>2</sup> / AWG 20 with end splices, conductor outer diameter 6.8 mm, NEMA 6 P / IP 68  
Order code: XM

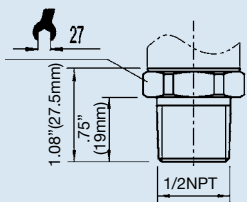


### Case

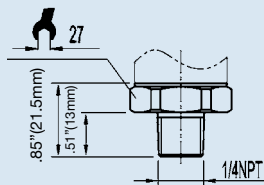


### S-10 pressure connections (others available)

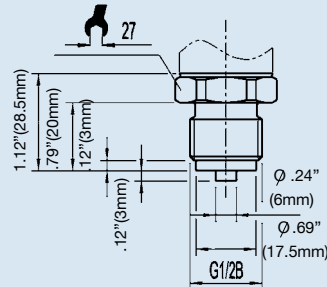
1/2 NPT male  
Order code: ND



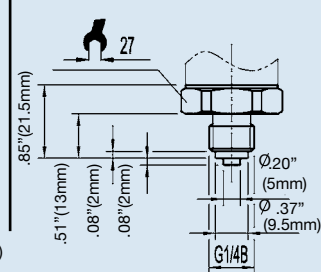
1/4 NPT male  
Order code: NB



G1/2B male  
Order code: GD

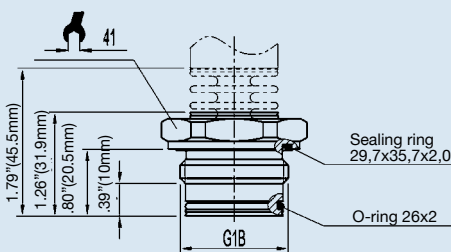


G1/4B male  
Order code: GB

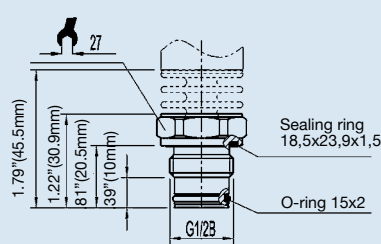


### S-11 flush diaphragm pressure connections

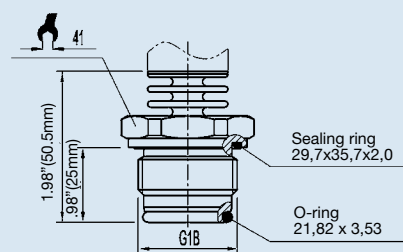
G 1 B  
with or without cooling element  
50 inWC to 30 psi  
Order code: 85



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



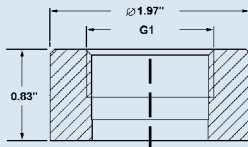
G1B according to EHEDG \*\*)  
with cooling element, up to 302°F (150°C)  
100 inWC to 250 psi  
Order code: 84



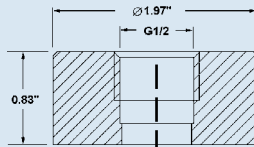
\*\* European Hygenic Equipment Design Group

.) Mating connector not included

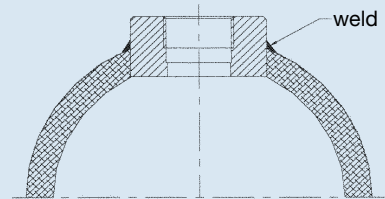
### Matching P-1 weld insert adapters for S-11 pressure transmitters



P-1 G1 weld insert adapter  
Part # 1206974  
for pressure ranges  $\leq 30$  psi



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



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

### Wiring

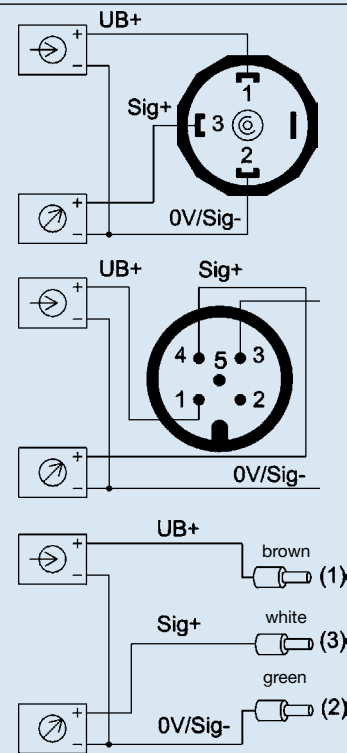
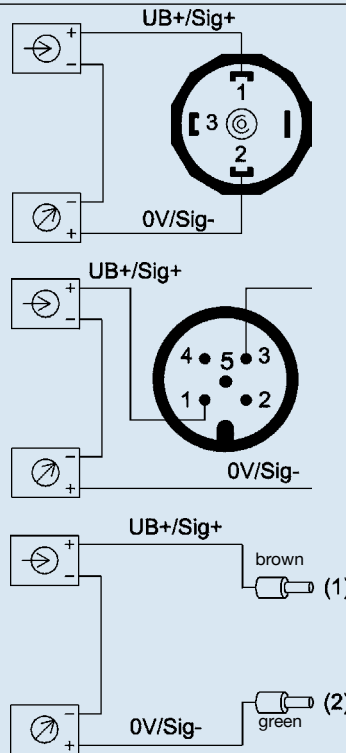
#### 2-wire system

#### 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:

	power supply	Sig+	output signal positive
	load (e.g. display)	UB+	power supply positive
		0V	power supply negative
		Sig-	output signal negative

# Type S-10 Industrial Pressure Transmitter

## Standard Features

- **Signal Output:** 4-20 mA 2-wire
- **Supply Voltage:** 10-30 VDC
- **Process Connection:** 1/2 NPT Male
- **Electrical Connection:** DIN EN 175301-803 (DIN 43 650) with plug connector



Gauge Ranges	
Description	
Range	Part #
0-50 inWC	<b>8367656</b>
0-100 inWC	<b>8341481</b>
0-5 psi	<b>8415072</b>
0-10 psi	<b>8642885</b>
0-15 psi	<b>8643628</b>
0-25 psi	<b>8341995</b>
0-30 psi	<b>8643636</b>
0-50 psi	<b>8348868</b>
0-60 psi	<b>8643644</b>
0-100 psi	<b>8643652</b>
0-160 psi	<b>8341155</b>
0-200 psi	<b>8644918</b>
0-250 psi	<b>8341163</b>
0-300 psi	<b>8341732</b>
0-400 psi	<b>8341953</b>
0-500 psi	<b>8341740</b>
0-600 psi	<b>8347128</b>
0-750 psi	<b>4294930</b>
0-1000 psi	<b>8610007</b>
0-1500 psi	<b>8341219</b>
0-2000 psi	<b>8353098</b>
0-3000 psi	<b>8342275</b>
0-5000 psi	<b>8340638</b>
0-8000 psi	<b>8341864</b>
0-10,000 psi	<b>8347242</b>
0-15,000 psi	<b>8359143</b>

Vacuum & Compound Ranges	
Description	
Range	Part #
30"-0 HgVac	<b>8642850</b>
30"-0-30 psi	<b>8415080</b>
30"-0-60 psi	<b>8415099</b>
30"-0-100 psi	<b>8648646</b>
30"-0-160 psi	<b>9796881</b>
30"-0-200 psi	<b>8985538</b>

Absolute Pressure Ranges	
Description	
Range	Part #
0-15 psia	<b>8587582</b>
0-25 psia	<b>8358503</b>
0-50 psia	<b>8347854</b>
0-100 psia	<b>9734538</b>
0-250 psia	<b>9734589</b>
0-500 psia	<b>9767164</b>

NOTE: TRONIC 36 and ready-to-ship part numbers shown in **bold, blue** print.

[Datasheet: S-10](#)

## S-10 Option List

Feature
Signal Output
4... 20 mA, 2-wire
0... 20 mA, 3-wire
0... 10 V, 3-wire
0... 5 V, 3-wire
1... 5 V, 3-wire
On inquiry
Unit
psi
InWC
psi absolute
On inquiry
Pressure Range
-30 inHg ... 0
-30 inHg ... 30 psi
-30 inHg ... 60 psi
-30 inHg ... 100 psi
-30 inHg ... 160 psi
-30 inHg ... 200 psi
0 InWC ... 50 InWC
0 InWC ... 100 InWC
0 psi ... 5 psi
0 psi ... 10 psi
0 psi ... 15 psi
0 psi ... 25 psi
0 psi ... 30 psi
0 psi ... 50 psi
0 psi ... 60 psi
0 psi ... 100 psi
0 psi ... 200 psi
0 psi ... 250 psi
0 psi ... 300 psi
0 psi ... 400 psi
0 psi ... 500 psi
0 psi ... 600 psi
0 psi ... 750 psi
0 psi ... 1000 psi
0 psi ... 1500 psi
0 psi ... 2000 psi
0 psi ... 3000 psi
0 psi ... 5000 psi
0 psi ... 8000 psi
0 psi ... 10000 psi
0 psi ... 15000 psi

Feature
Pressure Range (continued)
0 psi ... 15 psi absolute
0 psi ... 25 psi absolute
0 psi ... 50 psi absolute
0 psi ... 100 psi absolute
0 psi ... 250 psi absolute
On inquiry
Process Connection
1/4" NPT
1/2" NPT
1/8" NPT
G 1/4 B
G 1/2 B
1/4" NPT female
1/2" NPT female
1/8" NPT female
7/16-20 UNF SAE #4 J514 male
9/16-18 UNF SAE #6 J514 male
9/16-18 UNF SAE #6 J514 female
3/4-16 UNF SAE #8 J514 male
3/4-16 UNF SAE #8 J514 female
Diaphragm seal
On inquiry
Special Design Features
Without
Oxygen, oil and grease free
On inquiry
Accuracy
+/- 0.25% B.F.S.L.
+/- 0.125% B.F.S.L.
Electrical Connection
4 Pin L-plug DIN EN 175301-803 with pg 9 (NEMA 5 / IP 65)
4 Pin L-plug DIN EN 175301-803 with 1/2" NPT Female Conduit (NEMA 5/IP 65)
5 Pin Locking Pin M12 x 1 Cable with Free Ends (NEMA 4 / IP 67)
1/2" NPT male conduit with cable
Submersible cable (NEMA 6 / IP 68)
4 Pin MIL plug PT02E-8-4P (NEMA 5 / IP 65)
6 Pin MIL plug PT02E-10-6P (NEMA 5 / IP 65)
On inquiry

## S-10 Order Configurations (cont'd)

<b>Feature</b>
<b>Cable Length</b>
Without
5 feet
10 feet
20 feet
30 feet
40 feet
50 feet
On inquiry
<b>Temperature Range of Medium</b>
-30 ... +100 °C (-22 ... +212 °F)
-40 ... +125 °C (-40 ... +257 °F)
<b>Approvals</b>
Without
GL, ABS, RINA
On inquiry
<b>Quality Certificates</b>
Without
NIST Certificate of Calibration
<b>Digital Display</b>
Without
Digital display
<b>Additional Order Details</b>
Without
Additional text

# Type S-11 Flush Diaphragm Industrial Pressure Transmitter

## Standard Features

- **Signal Output:** 4-20 mA 2-wire
- **Supply Voltage:** 10-30 VDC
- **Electrical Connection:** DIN EN 175301-803 (DIN 43 650) with plug connector
- **Process Connection:** G1B or G1/2B depending upon pressure range



Gauge Ranges	
Description	
Range	Part #
0-50 inWC <sup>1</sup>	<b>9739640</b>
0-100 inWC <sup>1</sup>	<b>8341473</b>
0-5 psi <sup>1</sup>	<b>4204051</b>
0-10 psi <sup>1</sup>	<b>8341074</b>
0-15 psi <sup>1</sup>	<b>8345726</b>
0-25 psi <sup>1</sup>	<b>8395736</b>
0-30 psi <sup>1</sup>	8395746
0-50 psi	<b>8395766</b>
0-60 psi	<b>8351312</b>
0-100 psi	<b>8341724</b>
0-160 psi	<b>8643407</b>
0-200 psi	<b>8641064</b>
0-250 psi	<b>8341961</b>
0-300 psi	<b>8341171</b>
0-400 psi	<b>8342003</b>
0-500 psi	<b>8341197</b>
0-600 psi	8345745
0-750 psi	8352865
0-1000 psi	<b>9777517</b>
0-1500 psi	<b>8366706</b>
0-2000 psi	8640823
0-3000 psi	<b>8341758</b>
0-5000 psi	<b>8340646</b>
0-8000 psi	9749581

Vacuum & Compound Ranges	
Description	
Range	Part #
30"-0 HgVac <sup>1</sup>	<b>8395706</b>
30"-0-30 psi	<b>9796058</b>
30"-0-60 psi	<b>8345622</b>
30"-0-100 psi	8340242
30"-0-200 psi	8342118

NOTE: TRONIC 36 and ready-to-ship parts numbers shown in **bold, blue** print.

NOTES:

<sup>1</sup>Pressure ranges from 50 inWC to 30 psi are supplied with G1B flush process connections; see Datasheet for details



## S-11 Option List

Feature	Feature
<b>Signal Output</b>	<b>Process Connection</b>
4... 20 mA, 2-wire	G 1 B, flush diaphragm with O-ring
0... 20 mA, 3-wire	G 1/2 B, flush diaphragm with O-ring
0... 10 V, 3-wire	On inquiry
0... 5 V, 3-wire	<b>Material of Wetted Parts</b>
On inquiry	Stainless steel,NBR O-Ring
<b>Unit</b>	Stainless steel,FPM/FKM O-Ring
psi	On inquiry
InWC	<b>Special Design Features</b>
psi absolute	Without
On inquiry	Suitable for food
<b>Pressure Range</b>	On inquiry
-30 inHg ... 0	<b>Accuracy</b>
-30 inHg ... 30 psi	+/- 0.25% B.F.S.L.
-30 inHg ... 60 psi	+/- 0.125% B.F.S.L.
-30 inHg ... 100 psi	<b>Electrical Connection</b>
-30 inHg ... 160 psi	4 Pin L-plug DIN EN 175301-803 with
-30 inHg ... 200 psi	1/2" NPT female conduit (NEMA 5 / IP65)
0 InWC ... 50 InWC	4 Pin L-plug DIN 43650 w/pg 9 NEMA 5 / IP65)
0 InWC ... 100 InWC	1/2" NPT male conduit w/cable
0 psi ... 5 psi	Submersible cable (NEMA 6 / IP 68)
0 psi ... 10 psi	4 Pin Mil Plug PTO2E-8-4P (NEMA 5 / IP 65)
0 psi ... 15 psi	6 Pin Mil Plug PTO2E-10-6P (NEMA 5 / IP 65)
0 psi ... 25 psi	<b>Cable Length</b>
0 psi ... 30 psi	Without
0 psi ... 50 psi	5 Feet
0 psi ... 60 psi	10 feet
0 psi ... 100 psi	20 feet
0 psi ... 160 psi	30 feet
0 psi ... 200 psi	40 feet
0 psi ... 250 psi	50 feet
0 psi ... 300 psi	Please give customer's specification
0 psi ... 400 psi	<b>Temperature Range of Medium</b>
0 psi ... 500 psi	-30 ... +100 °C (-22 ... +212 °F)
0 psi ... 600 psi	-40 ... +125 °C (-40 ... +257 °F)
0 psi ... 750 psi	-20 ... +150 °C (-4 ... +302 °F)
0 psi ... 1000 psi	<b>Approvals</b>
0 psi ... 1500 psi	Without
0 psi ... 2000 psi	On inquiry
0 psi ... 3000 psi	<b>Quality Certificates</b>
0 psi ... 5000 psi	Without
0 psi ... 8000 psi	NIST Certificate of Calibration
0 psi ... 15 psi absolute	<b>Additional order details</b>
0 psi ... 25 psi absolute	Without
0 psi ... 50 psi absolute	Additional text
0 psi ... 100 psi absolute	
0 psi ... 250 psi absolute	
On inquiry	