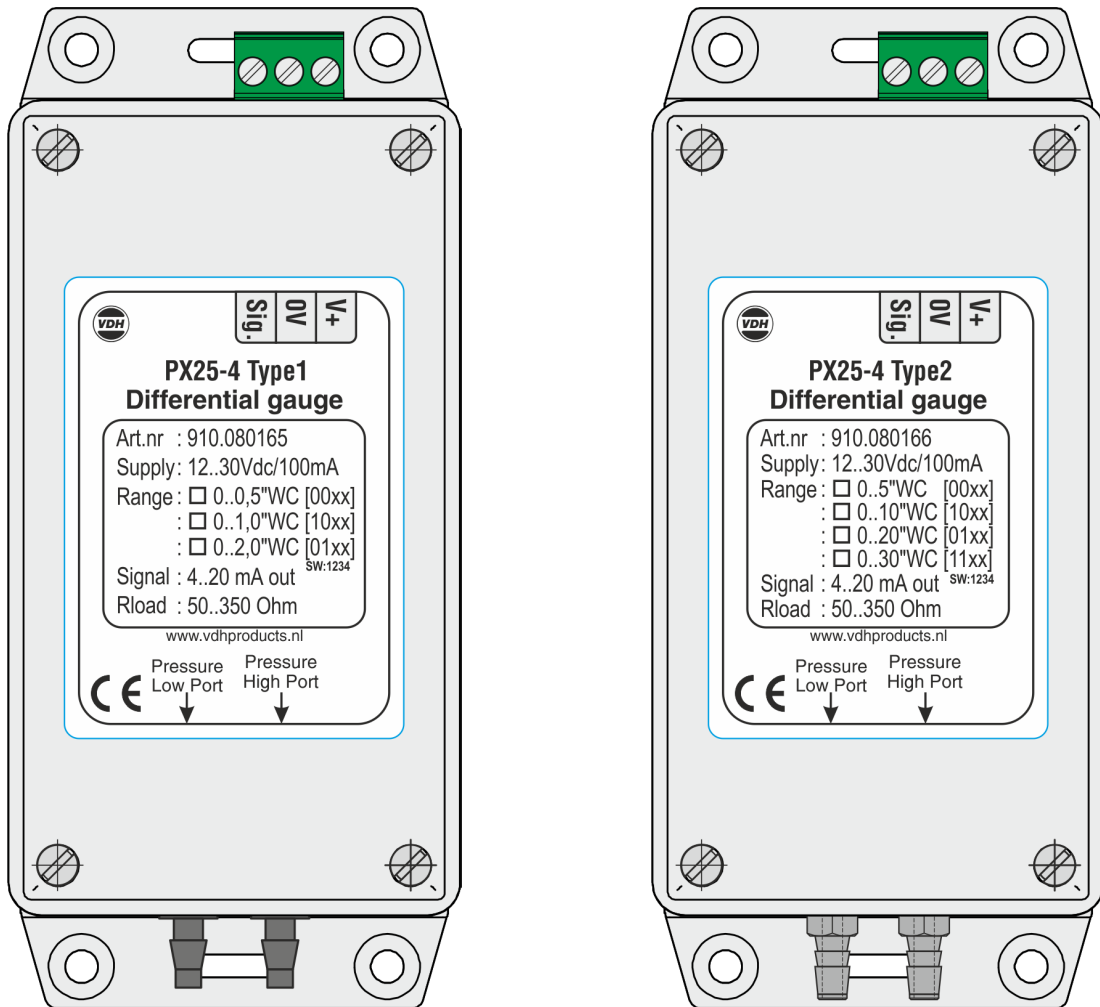


Manual PX 25-4

differential pressure gauge



Description: PX 25/4 Type1 (0-0.5...0-2.0\"/>		Doc.nr.: 111034
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1. Technical specifications.

Type	PX 25-4 Type 1 0..0,5"WC 0-2"WC (0..500Pa max.)	PX 25-4 Type 2 0..5"WC 0-30"WC (0..7500Pa max.)
Type number	910.080165	910.080166
Voltage	12 - 30Vdc	
Current consumption	max 100 mA	
Control	dipswitches (S1..4) and potentiometer (P1) on circuit board	
Readout	None	
Network connection	None	
Dimensions housing	138 x 33 x 62 mm (whd)	
Operating temperature	0/+60°C	
Storage temperature	0/+60°C	
Measuring range	depending on settings (dipswitches)	
Range-1 = S1 off, S2 off	0 - ½ " WCD (≈ 0 - 125 Pa)	0 - 5 " WCD (≈ 0 - 1250 Pa)
Range-2 = S1 on, S2 off	0 - 1 " WCD (≈ 0 - 250 Pa)	0 - 10 " WCD (≈ 0 - 2500 Pa)
Range-3 = S1 off, S2 on	0 - 2 " WCD (≈ 0 - 500 Pa)	0 - 20 " WCD (≈ 0 - 5000 Pa)
Range-4 = S1 on, S2 on	Undefined	0 - 30 " WCD (≈ 0 - 7500 Pa)
Maximum pressure	1 bar (400 " WCD, 100 kPa)	
Accuracy *	3% of measurement +/- 0,5% F.S.O.	< 1,5% F.S.O.
Offset shift due to temperature variation	None (less than resolution)	< 8 Pa
Offset stability	< 0.1 Pa/year	< 8 Pa/year
Output signal	4 - 20 mA	
Output load	50 - 350 Ohm	
Electrical connections	Plugable connector with screw terminals (wiring: 0,2..2,5mm ²)	
Pressure High and Low connections	2 barbed fittings for use with 1/8" (ø4mm) ID vinyl or rubber tubing	

*) Accuracies are valid at 25 °C and 1013 mBar.

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2. Functional specifications.

2.1 Installation.

Location

The PX 25/4 pressure sensor should be placed in a as clean, dry and vibration free location.

Pressure Connections

The PX 25/4 pressure sensor uses 2 barbed fittings for use with 1/8" ID vinyl or rubber tubing (\varnothing 4mm). Attach tubing from positive pressure or higher pressure source to port marked 'High' and lower or negative pressure to port marked 'Low'. Arrange tubing to minimize stress on connections. If possible, mount with ports facing down to aid in moisture drainage.

Note: When removing tubing care should be used to avoid breaking the ports. In some cases the tubing should be cut off, rather than pulled off, especially if stiff tubing is being used.

Mounting

Attach the PX 25/4 sensor to the mounting surface using 4 fasteners inserted through the four mounting holes located on the top and bottom side of the case. Do not over tighten.

2.2 Operation.

The PX 25/4 pressure sensor measures a differential pressure and outputs a 4/20mA current signal which corresponds to the measured differential pressure.

The sensor can be configured to output its maximum current (20 mA) at different maximum pressures.

For Type 1 the maximum pressures can be;

1/2" WCD (\approx 125 Pa), 1" WCD (\approx 250 Pa) or 2" WCD (\approx 500 Pa)

And for Type 2 the maximum can be;

5" WCD (\approx 1250 Pa), 10" WCD (\approx 2500 Pa), 20" WCD (\approx 5000 Pa) or 30" WCD (\approx 7500 Pa).

The output varies from 4 mA (at no differential pressure) to 20 mA (at the maximum pressure) depending on settings.

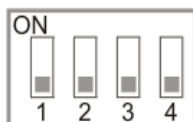
Using the offset potentiometer P1 (with S4=on), a offset value can be set which is added to the output.

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3. Configuration.

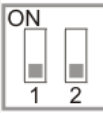
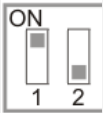
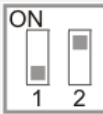
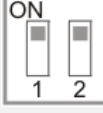
Using the dipswitches on the circuit board, the sensor can be adjusted in measurement and offset range. The offset can be set using the potentiometer which is located besides the dipswitches.

The circuit board contains 4 dipswitches (S1..4), number 1 and 2 are used to select the measurement range, number 3 is used to adjust the measurement speed and number 4 is used to select whether the offset set by the potentiometer should be used or not.



In the image shown, the dipswitches are switched off, by sliding them to the top they are switched on. The function of the different switches are described below.



To adjust the measurement range, dipswitch 1 and 2 can be used. The table below shows the dipswitch settings and the corresponding measurement and offset range for both type 1 and type 2 sensors.

PX 25-4	Type 1		Type 2	
Dip-switch 1 and 2	Measurement range	Offset range (P1)	Measurement range	Offset range (P1)
 S1 off S2 off	0 - ½" WCD (≈ 0 - 125 Pa)	-0.2 to +0.2 "WCD (≈ -50 Pa to +50 Pa)	0 - 5" WCD (≈ 0 - 1250 Pa)	-2 to +2 "WCD (≈ -500 Pa to +500 Pa)
 S1 on S2 off	0 - 1" WCD (≈ 0 - 250 Pa)	-0.4 to +0.4 "WCD (≈ -100 Pa to +100 Pa)	0 - 10" WCD (≈ 0 - 2500 Pa)	-4 to +4 "WCD (≈ -1000 Pa to +1000 Pa)
 S1 off S2 on	0 - 2" WCD (≈ 0 - 500 Pa)	-0.4 to +0.4 "WCD (≈ -100 Pa to +100 Pa)	0 - 20" WCD (≈ 0 - 5000 Pa)	-4 to +4 "WCD (≈ -1000 Pa to +1000 Pa)
 S1 on S2 on	Undefined	Undefined	0 - 30" WCD (≈ 0 - 7500 Pa)	-4 to +4 "WCD (≈ -1000 Pa to +1000 Pa)



Independent from the selected range, the output will be 4 mA when the pressure is 0 Pa. However, the output will be 20 mA at the maximum value of the selected range.

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Using dipswitch number 3, the sensors speed of response can be adjusted. A quick response will have the effect that the output will be responding sooner on a changed pressure value, but the signal will also fluctuate more. An easier response will respond slower on a changed pressure value, but will result in a more constant output signal.

Dipswitch 3	meaning
 S3 off 3	Quick response.
 S3 on 3	Easy response.

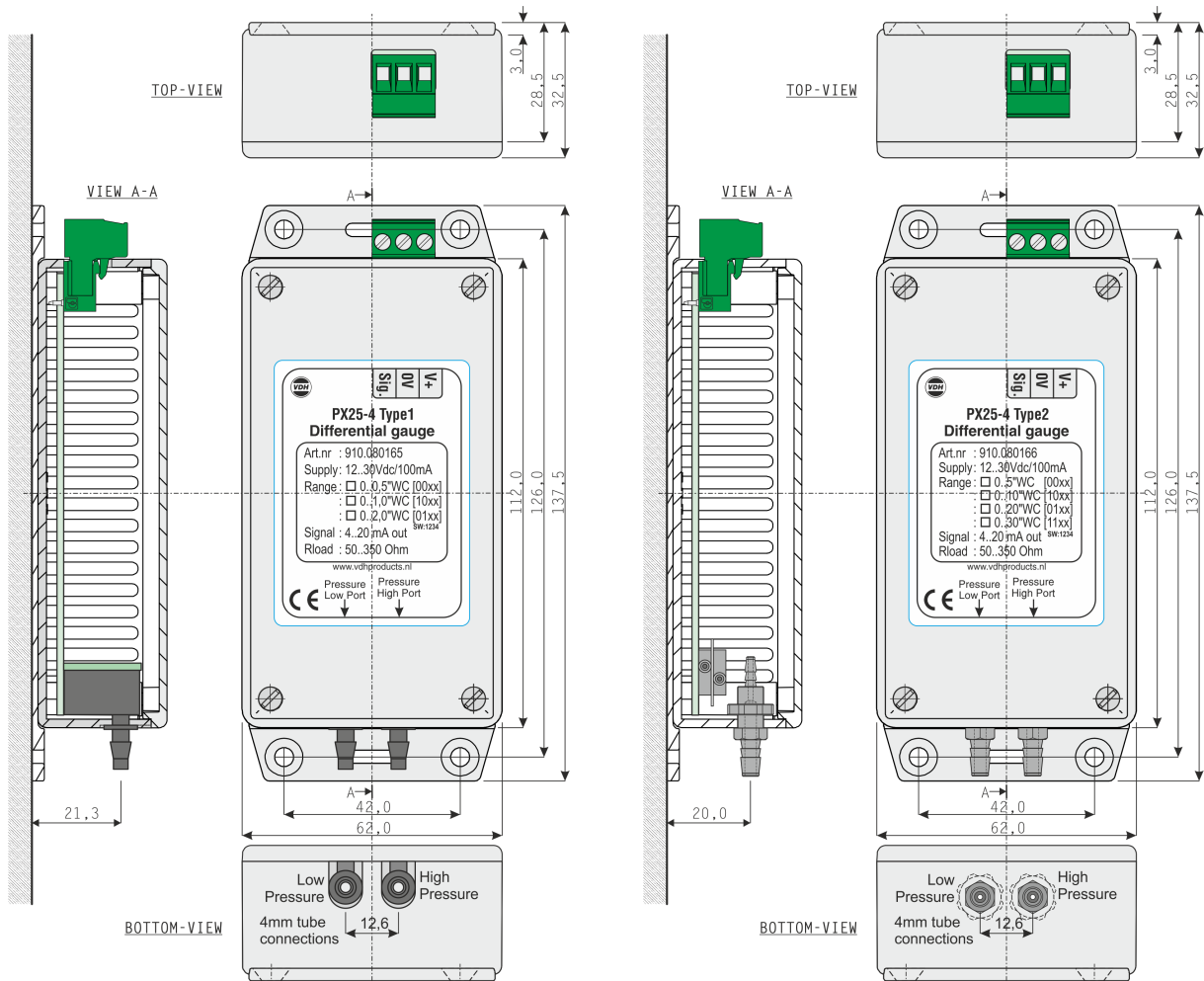
The amount of offset that will be added to the output signal can be changed using the potentiometer P1. Dipswitch number 4 determines if the chosen offset should be used or not.

Dipswitch 4	meaning
 S4 off 4	The offset will not be used.
 S4 on 4	The offset will be used.

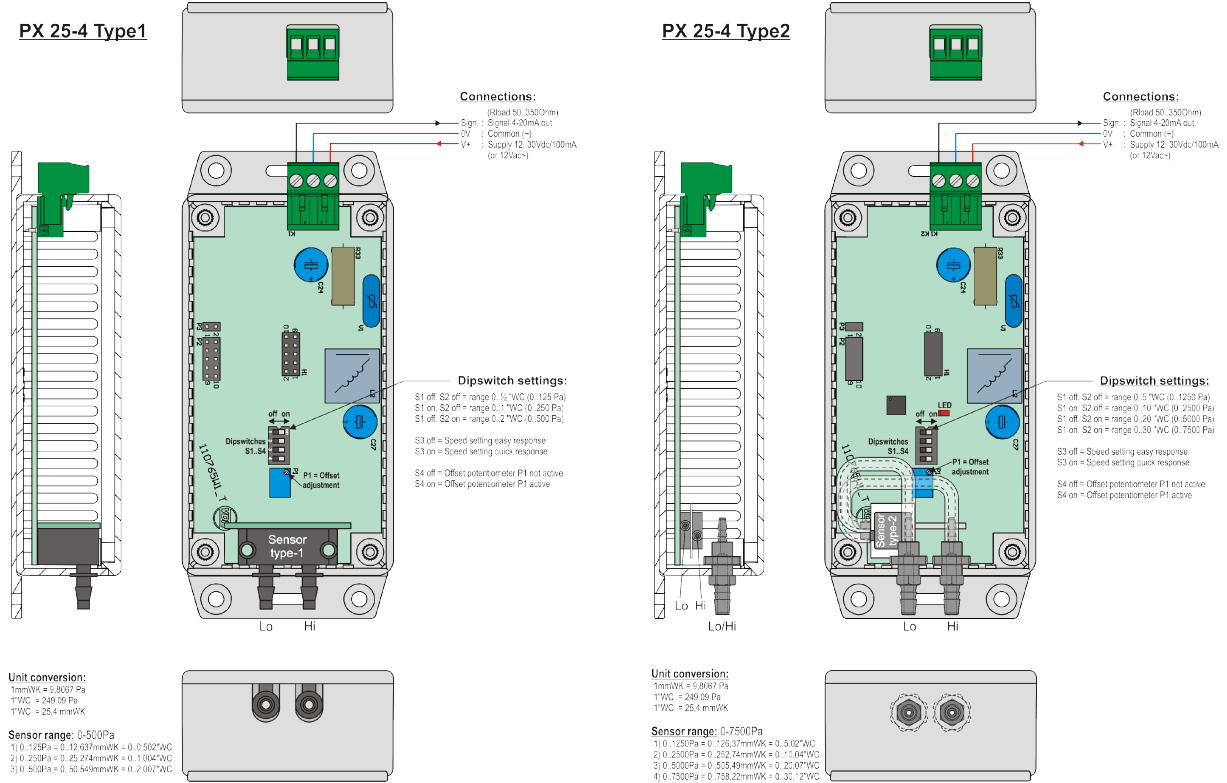
The offsetvalue set using the potentiometer indicates at what pressure value the sensor should output at signal of 4 mA. By setting the offset to a value of -10 Pa, a measured pressure value of 0 Pa will not result in an output of 4 mA, but as soon as the pressure value has reached 10 Pa, the outputsignal will be 4 mA.

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5. Dimensions.



6. Connection diagrams.



7. Address.

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