CERAMIC PRESSURE MEASURING CELL CPS 1184

This monolithic ceramic pressure measuring cell has a diameter of 18 mm and is suitable for measuring gauge pressure up to 600 bar.

Available with pitch dimensions of 1.27 or 2.54 mm and as a Z variant with signal amplification (see CPS 1184 Z).

Advantages
– Compact design
– High measurement accuracy
– Very good media resistance
– Excellent long-term stability

Application examples
– Pumps
– Pressure transmitters
– Heating and cooling systems
– Pressure monitoring

General data	
Sensor technology	Piezoresistive, Wheatstone bridge
Sensor type	Monolitic, gauge measurement

Electrical data	
Pressure range	-1 to 600 bar
Supply voltage	3 to 30 VDC
Output signal	Analog
Bridge impedance	10 kOhm ± 20%
Current consumption	≤ 1.2 mA at 10 VDC
Offset	0 ± 0.2 mV/V
Thermal offset spin	Min. ± 0.03 / Typ. ± 0.016/ Max. ± 0 % FS/K
Thermal span shift	Compensated: 0 to ± 0.02 % FS/K at +25 to +85 °C ± 0.05 to ± 0.15 % FS/K at -40 to +25 °C and +85 to +135 °C Not compensated: ± 0.02 to ± 0.08 % FS/K at +25 to +85 °C ± 0.05 to ± 0.15 % FS/K at -40 to +25 °C and +85 to +135 °C

Mechanical data	
Dimensions	See drawing
Diameter	18 mm
Pitch	1.27 or 2.54 mm
Weight	< 5 g

Environmental data	
Operating temperature	-40 to +135 °C*
Storage temperature	-40 to +150 °C

* Operating temperature for pressure measuring cell with cable is reduced depending of material

Material	
Sensor body	Ceramic Al_2O_3 96 %

Electrical connection
Solder pad tinned
Solder pin
Cable
Other connections on request

Nominal pressure		2 bar	5 bar	10 bar	20 bar	50 bar	100 bar	200 bar	400 bar	600 bar
Gauge pressure		•	•	•	•	•	•	•	•	•
Overpressure*	bar	≤ 3	≤ 7.5	≤ 15	≤ 30	≤ 75	≤ 150	≤ 300	≤ 550	≤ 720
Burst pressure	bar	≥ 5	≥ 15	≥ 30	≥ 60	≥ 150	≥ 250	≥ 450	≥ 700	≥ 900
Vacuum strength	bar	-0.6	-0.8	-1	-1	-1	-1	-1	-1	-1
Sensitivity	mV/V	2.9 – 3.9	2.8 – 3.8	2.5 – 3.5	2.5 – 3.5	2.7 – 3.7	2.9 – 3.9	2.7 – 3.7	2.4 – 3.4	2.2 – 3.2
Accuracy** typ./max.	% FS	0.3 / 0.5	0.3 / 0.5	0.3 / 0.5	0.3 / 0.5	0.3 / 0.5	0.5 / 0.6	0.5 / 0.6	0.6 / 0.7	0.6 / 0.7

* The specified overpressure ensures correct functioning of the cell in the event of overload. Duration of overpressure < 1 s
** Basis of calculation:

$$\text{Accuracy} = \sqrt{\text{Nonlinearity}^2 + \text{Hysteresis}^2 + \text{Nonrepeatability}^2}$$

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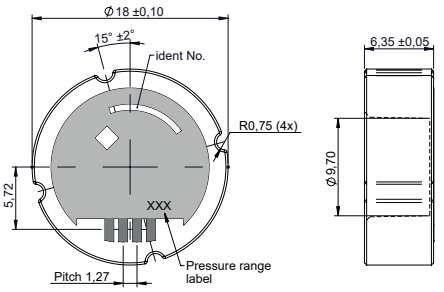
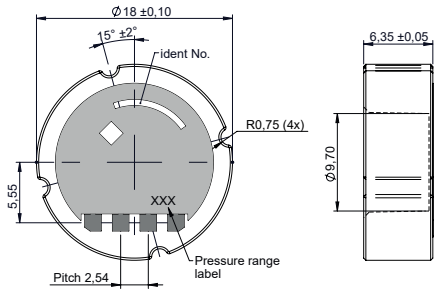
Dimensions

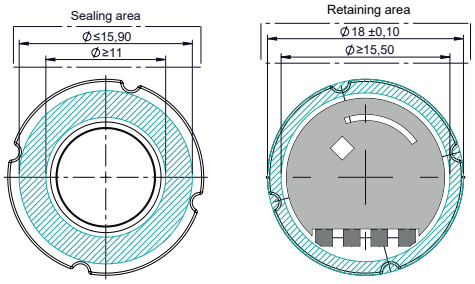
Pitch 1.27 mm



Pitch 2.54 mm



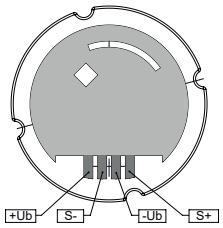
Mounting proposal



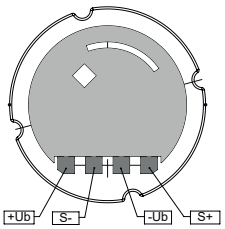
All dimensions in mm

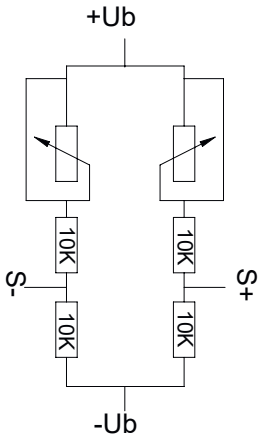
Connection diagram

Pitch 1.27 mm



Pitch 2.54 mm

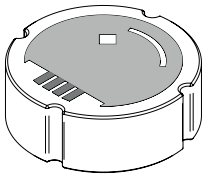




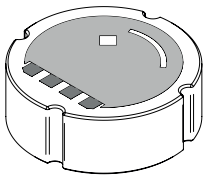
Electrical connection

Solder pad tinned

Pitch 1.27 mm



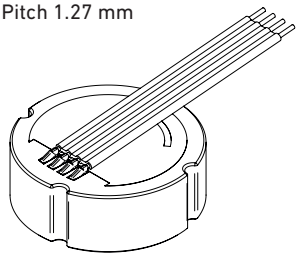
Pitch 2.54 mm



Cable

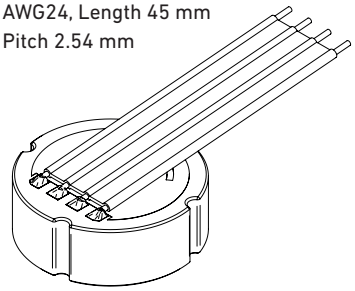
AWG24, Length 45 mm

Pitch 1.27 mm



AWG24, Length 45 mm

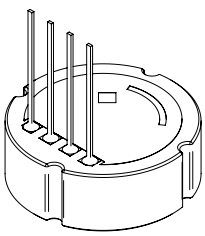
Pitch 2.54 mm



Solder pin

0.5 x 0.27 mm, Length max. 13 mm

only Pitch 2.54 mm



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We therefore recommend that you carry out your own investigations into the planned use of the products under the actual operating conditions.

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