CERAMIC PRESSURE CELL CPS 2184

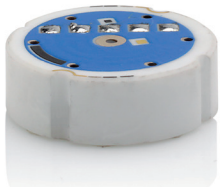
This flush-mounted ceramic pressure measuring cell has a diameter of 18 mm and is suitable for measuring gauge, absolute and sealed gauge pressure.

It is available for pressure ranges from -1 to 600 bar and as a Z variant with signal amplification (see CPS 2184 Z).

Due to the flush-mounted membrane, the measuring cell is easy to clean and is therefore also suitable for hygienic applications or viscous media.

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

Application examples
– Pumps
– Pressure transmitters
– Heating and cooling systems
– Medical technology





General data	
Sensor technology	Piezoresistive, Wheatstone bridge
Sensor type	Flush-mounted, Gauge, absolute and sealed gauge pressure

Electrical data	
Pressure range	-1 to 600 bar
Supply voltage	3 to 30 VDC
Output signal	Analog
Current consumption	≤ 1.2 mA at 10 VDC
Offset	0 ±0.2 mV/V
Temperature Coefficient of Span	0 to -0.013 % FS/K (0 to 70 °C) 0 to -0.015 % FS/K (-20 to 0 °C and 70 to 85 °C) 0 to -0.018 % FS/K (-40 to 0 °C and 85 to 135 °C)
Temperature Coefficient of Offset	0 ±0.03 % FS/K (20 to 85 °C) Compensated

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

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

*The operating temperature range may vary depending on the electrical connection.

Material	
Sensor body	Ceramic Al_2O_3 96 % Others on request

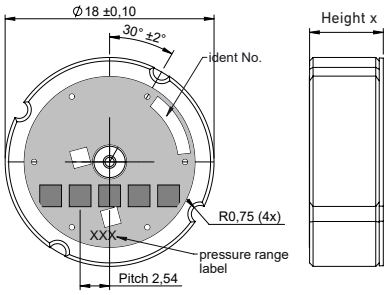
Electrical connection
Solder pad tinned
Solder pin
Cable
Others on request

Nominal pressure		0.5 bar	1 bar	2 bar	5 bar	10 bar	20 bar	50 bar	100 bar	200 bar	400 bar	600 bar
Gauge pressure		•	•	•	•	•	•	•				
Absolute pressure			•	•	•	•	•	•				
Sealed gauge pressure									•	•	•	•
Overpressure	bar	≤ 1	≤ 1.5	≤ 3	≤ 7.5	≤ 15	≤ 30	≤ 75	≤ 150	≤ 300	≤ 500	≤ 700
Burst pressure	bar	≥ 1.5	≥ 2.5	≥ 5	≥ 12	≥ 25	≥ 40	≥ 100	≥ 250	≥ 400	≥ 600	≥ 900
Vacuum strength	bar	-0.1	-0.4	-0.6	-1	-1	-1	-1	-1	-1	-1	-1
Sensitivity	mV/V	1.5 – 2.5	2.1 – 3.1	2.1 – 3.1	2.5 – 3.5	3.7 – 4.7	2.5 – 3.5	4.2 – 5.2	3.7 – 4.7	2.8 – 3.8	3.5 – 4.5	2.1 – 3.1
Accuracy** typ./max.	% FS	0.5 / 0.9	0.5 / 0.9	0.4 / 0.8	0.4 / 0.8	0.4 / 0.6	0.4 / 0.6	0.4 / 0.6	0.5 / 0.8	0.5 / 0.9	0.5 / 0.9	0.5 / 0.9

* 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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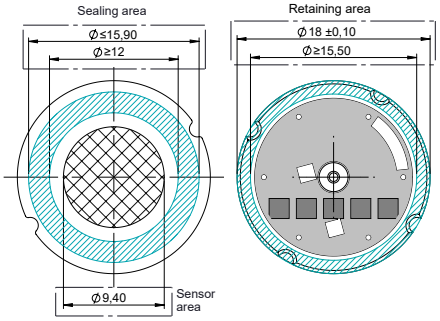


Round diaphragm

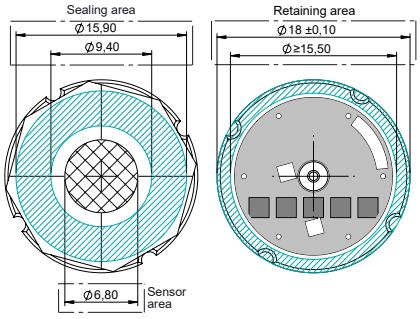
Round diaphragm		
Nominal pressure	**Height**	**Tolerance**
bar	**mm**	**mm**
0.5	6.13	± 0.15
1	6.20	± 0.15
2	6.25	± 0.15
5	6.30	± 0.15
10	6.35	± 0.15
20	6.55	± 0.15
50	6.70	± 0.15

Octogonal diaphragm		
Nominal pressure	**Height**	**Tolerance**
bar	**mm**	**mm**
100	6.70	± 0.15
200	7.05	± 0.15
400	7.35	± 0.20
600	7.55	± 0.20

Mounting proposal

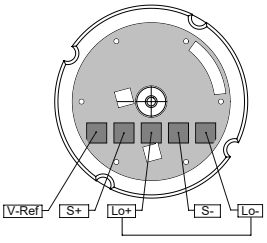


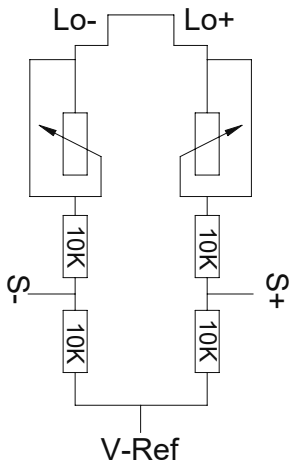
Round diaphragm
0.5 – 50 bar



Octogonal diaphragm
100 – 600 bar

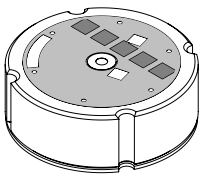
Connection diagram



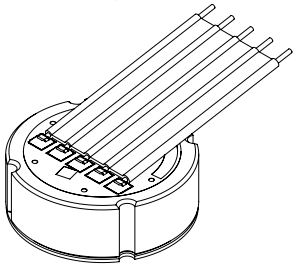


Electrical connection

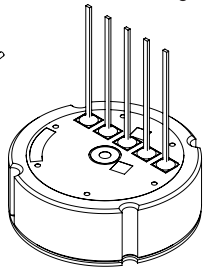
Solder pad



Cable
AWG24, Length 45 mm



Solder pin
0.5 x 0.27 mm, Length max. 13 mm



All dimensions in mm

Metallux cannot picture the customer's operating and application conditions and the customer's existing environmental influences.
We therefore recommend that you carry out your own investigations into the planned use of the products under the actual operating conditions.

We continuously improve our products and also update our data sheets regularly. In this respect, there may be changes in the specification.
These changes will apply to orders received by us from the time of the update, unless otherwise agreed.

Our products comply with Directive 2011/65/EU (RoHS) including Directive 2015/863/EU and Regulation (EC) No. 1907/2006 (REACH).