

CERAMIC PRESSURE CELL CPS 2184 Z

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. A signal amplification (Z) is integrated.

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

- Signal amplification ratiometric
- 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	5 V ± 0.5 VDC
Output signal	Ratiometric 10 – 90% I ² C
Current consumption	< 10 mA typ. Rload > 2 kJ < 50 mA max.
Calibration error	± 1 % / FS
Thermal offset shift	0 ± 0.05 % FS/K 0° – 80 °C not compensated
Thermal span shift	0 to -0.012 % FS/K (20 to 80 °C) 0 to -0.018 % FS/K (-40 to 125 °C)
Sample rate	1 kHz typ. / 0.5 kHz min.
Insulating resistor	1 GΩ
Insulating voltage	> 0.5 kVDC

Mechanical data	
Dimensions	See drawings
Diameter	18 mm
Weight	≤ 5 g

Environmental data	
Operating temperature	-40 to +125 °C
Storage temperature	-20 to +125 °C

Material	
Sensor body	Ceramic Al ₂ O ₃ 96 % Others on request

Electrical connection	
	Connector JST B3B-ZR-SM4-TF (LF)(SN) 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
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

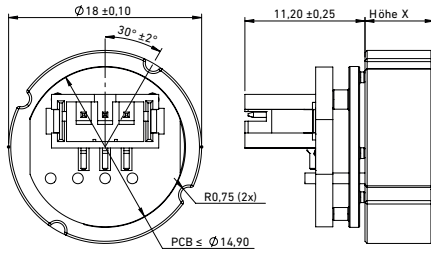
** Basis of calculation:

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

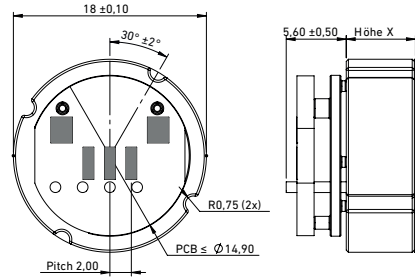
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Dimensions

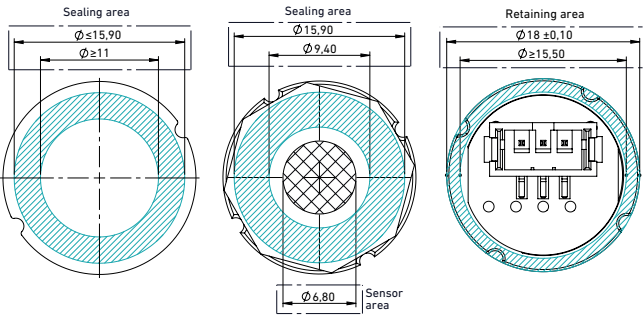
Connector



Solder pad



Mounting proposal



Round diaphragm
0.5 – 50 bar

Octogoonal diaphragm
100 – 600 bar

Round diaphragm

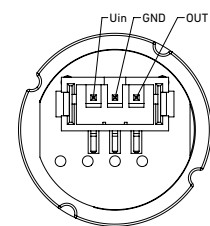
Nominal pressure bar	Height X mm	Tolerance mm
0.5	6.13	± 0.15
1	6.20	± 0.15
2	6.25	± 0.15
5	6.30	± 0.15
10	6.35	± 0.15
20	6.55	± 0.15
50	6.70	± 0.15

Octogonal diaphragm

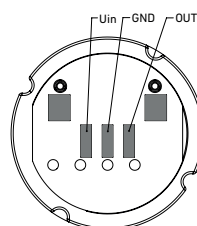
Nominal pressure bar	Height X mm	Tolerance mm
100	6.70	± 0.15
200	7.05	± 0.15
400	7.35	± 0.20
600	7.55	± 0.20

Connector diagram

Connector



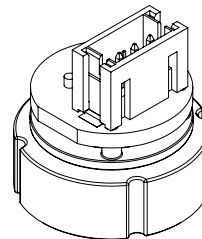
Solder pad



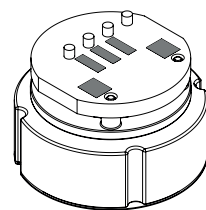
Electrical connection

Connector

JST B3B-ZR-SM4-TF (LF)(SN)



Solder pad



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).