

**HUBA****513 Series Pressure Sensor**

*OEM Ceramic Pressure Sensor, F.S. Ranges from -1 to 160 bar (-14.5 to 2320 psi)*

**DESCRIPTION**

This pressure-measuring cell is based on time proven ceramic technology.

Due to the very robust design of the ceramic cell there are no significant changes in the sensor characteristics when packaged by the customer.

This technology with an amplified ratiometric output signal, supports direct assembly without the need for the user to adjust for temperature or pressure.

- **NEGLIGIBLE TEMPERATURE INFLUENCE ON ACCURACY**
- **NO CUSTOMER SPECIFIC ADJUSTMENT OF ZERO POINT AND TEMPERATURE COMPENSATION NECESSARY**
- **INTEGRATED AMPLIFIER ELECTRONICS**
- **EASY MOUNTING**

**SPECIFICATIONS**

Medium: Liquids and neutral gases

Pressure ranges:

Absolute: 0 to 1 to 25 bar (0 to 14.5 to 363 psia)

0.8 to 1.4 bar (bar. sensor. 23.6 to 41.3 " Hg)

Relative/Gauge: -1 to 0 - 160 bar (-14.5 to 0 to 2,320 psig)

Overload / Rupture pressure:

3.0 x Measuring range at -1 to 4 bar (-14.5 to 58 psi)

2.5 x Measuring range at 6 to 60 bar (87 to 870 psi)

2.0 x Measuring range at 100 to 160 bar (1,450 to 2,320 psi)

Higher overload, higher rupture pressure on request

Material in contact with the medium:

Measuring cell: Ceramic Al<sub>2</sub>O<sub>3</sub> (96%)

Sealing material: FPM, NBR, FPM spec.

Temperature Medium and ambient with sealing:

FPM -15 to +125 °C (5 to +257 °F)

NBR -25 to +85 °C (-13 to +185 °F)

FPM spec. -30 to +150 °C (-22 to +302 °F)

Storage -40 to +130 °C (-40 to +266 °F)

Storage In packaging -40 to +65 °C (-40 to +149 °F)

Accuracy:

Resolution: 0.1% fs

Long-term stability acc. DIN IEC 60770: ±0.5% fs

Total of linearity, hysteresis and repeatability:

max. ±0.3% fs

Barometrical sensor max. ±0.5% fs

Versions with full scale adjustment:

Tolerance zero point: max. ±0.5% fs

Tolerance full scale: max. ±0.5% fs

Versions without full scale adjustment:

Zero point: 0.5 V ±0.02 V

Full scale: 3.0 V ±1.2 V

Power supply / Output:

Power supply: 5 VDC (4.75 to 5.25 V)

Output with full scale adjustment:

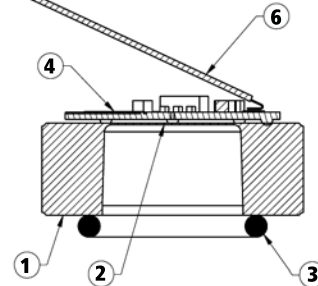
ratiom. 0.5 to 4.5 V, 10 to 90% of power supply

Output without full scale adjustment:

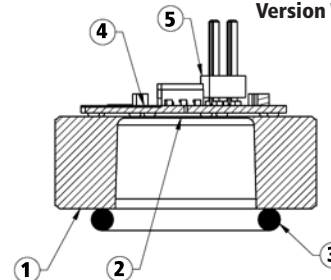
0.5 to 3 ±1.2 V



Version With Flexible Connector



Version With Connector

**Cross-section Drawing Legend**

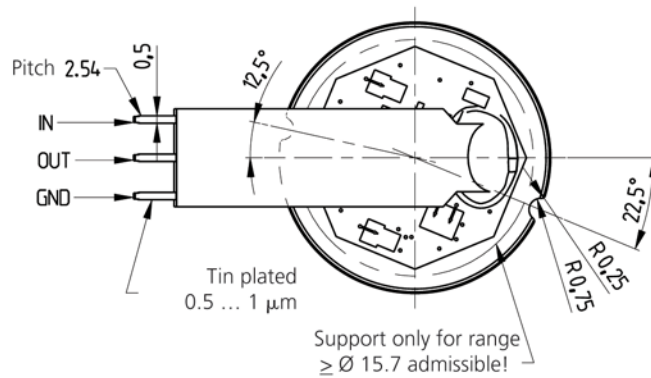
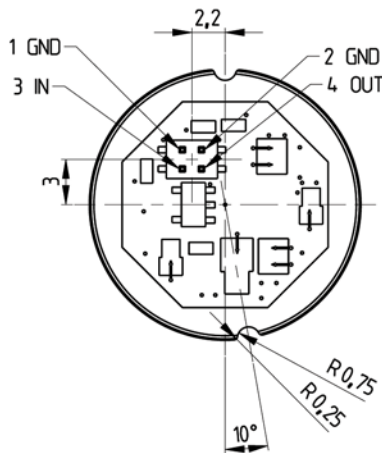
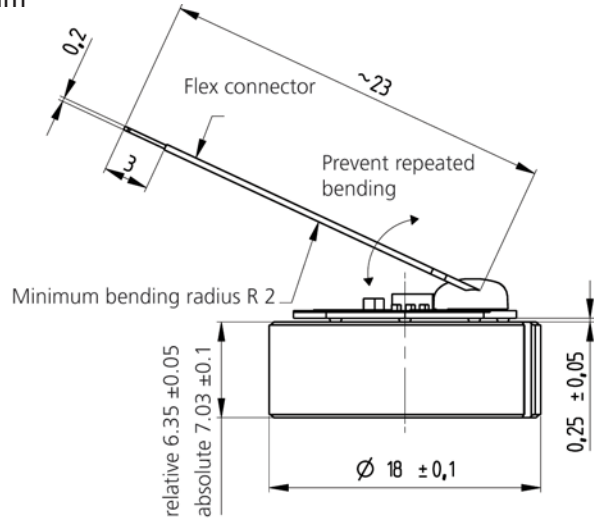
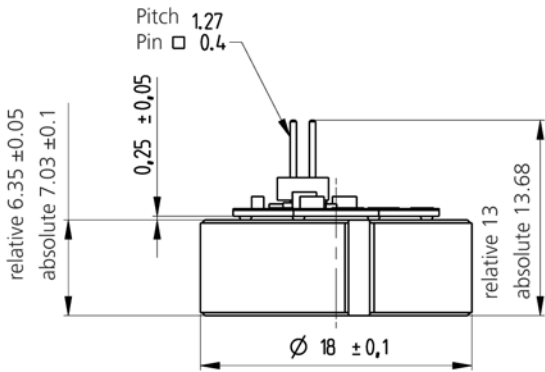
1	Ceramic measuring cell
2	Measuring diaphragm
3	O-Ring seal
4	Amplifier Electronics
5	Electrical Connection
6	Flexible connector

## SPECIFICATIONS

Load: > 10 kOhm / < 100 nF  
 Current consumption: At nominal pressure without load < 4 mA  
 Temperature influences In the range -30 ... +125 °C:  
 Zero point: max. Max. ±0.15% fs/10K  
 Span: Max. ±0.15% fs/10K  
 Dynamic response: Suitable for static and dynamic measurements  
 Response time: < 2 ms, 1 ms Typ.  
 Load cycle: < 100 Hz  
 Electrical connection:  
 Connector Contact Spacing: 1.27 mm (50 mil)  
 Flexible connector Contact Spacing: 2.54 mm (100 mil)

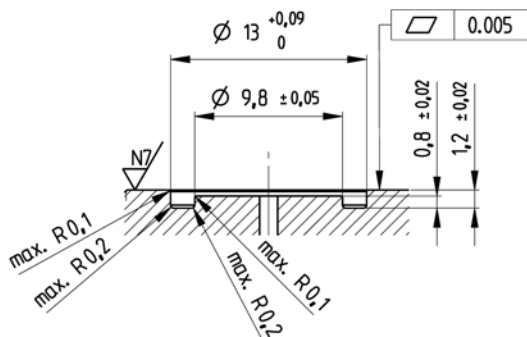
Optional Humidity protection: KFW, 20 days acc. DIN 50017  
 Assembly / housing: According to recommendation of factory with special assembly instructions  
 ESD-handling: Necessary  
 Weight: Approx. 5 g  
 Packaging :  
 Cells with connector: 5 blisters (480 pcs) in covering box  
 Cells with flexible connector: 5 blisters (400 pcs) in covering box

## DIMENSIONS MM



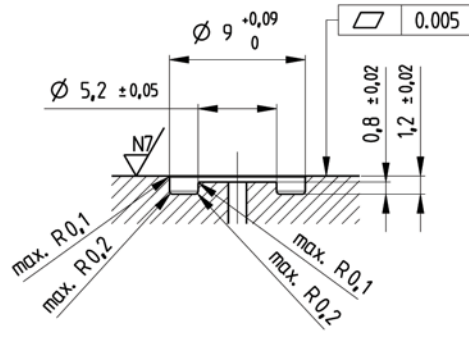
≤ 60 bar

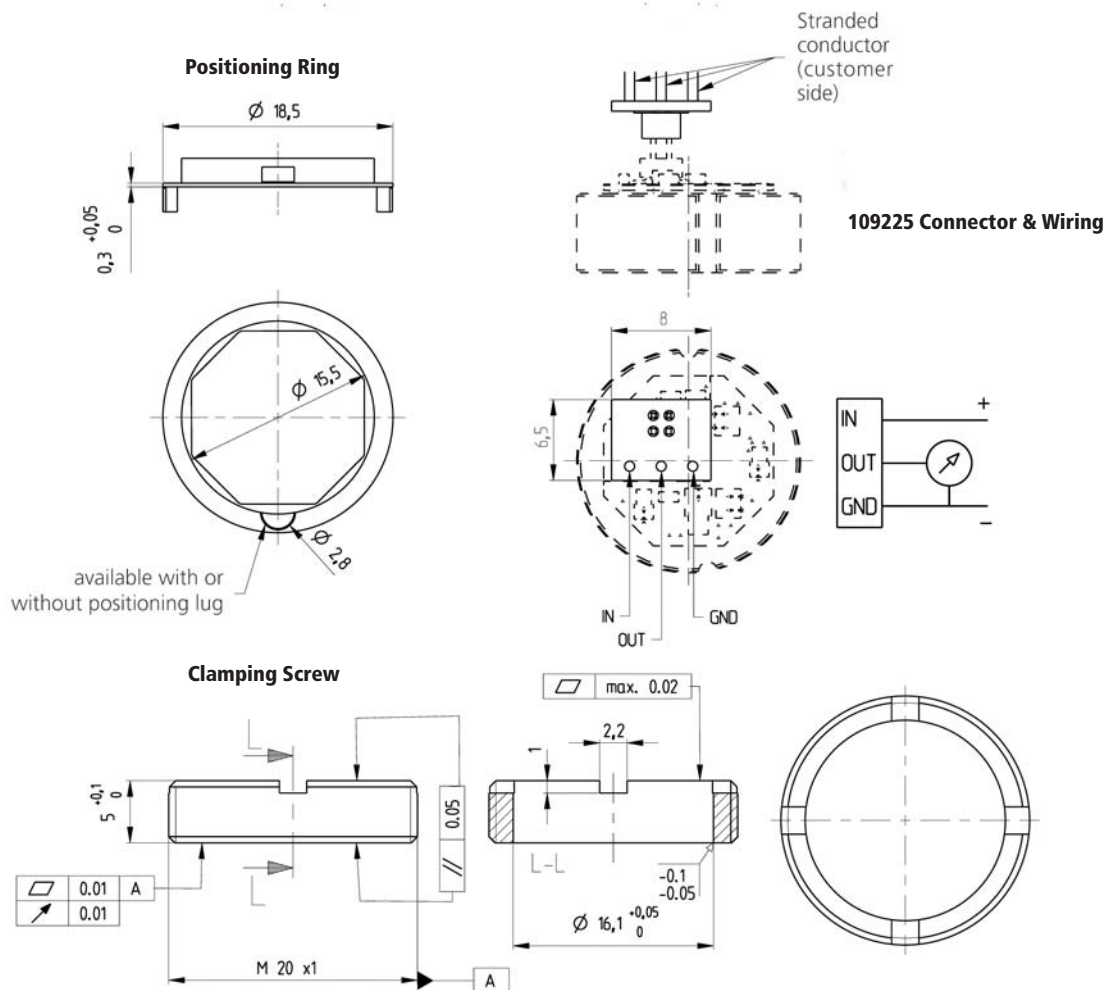
Recommended groove dimensions for o-ring Ø 10 x 1.5



≥ 100 bar

Recommended groove dimensions for o-ring Ø 6 x 1.5





ORDERING INFORMATION A-B-C-D-E (513-9-17-0-0H)				
A Model	B Pressure	C Pressure Range	D Calibration	E Output & Power Supply
513	9= Relative/Gauge 8= Absolute	00= -1 to 0 bar (Relative/Gauge Only) 10= 0.8 to 1.4 bar (Barometric Sensor-Absolute Only) 11= 0 to 1 bar 12= 0 to 1.6 bar 14= 0 to 2.5 bar 15= 0 to 4 bar 17= 0 to 6 bar 30= 0 to 10 bar 31= 0 to 16 bar 32= 0 to 25 bar (Relative/Gauge Only) 33= 0 to 40 bar (Relative/Gauge Only) 40= 0 to 60 bar (Relative/Gauge Only) 41= 0 to 100 bar (Relative/Gauge Only)	0= Factory Adjusted Zero Point & Full Scale 1= Factory Adjusted Zero Point Only (Relative Models Only)	04= 0.5 ... 4.5 V ratiom. with connector without humidity protection; 5 VDC (4.75 ... 5.25) 0F= 0.5 ... 4.5 V ratiom. with connector with humidity protection 5 VDC (4.75 ... 5.25) 0H= 0.5 ... 4.5 V ratiom. with flexible connector without humidity protection 5 VDC (4.75 ... 5.25) 0J= 0.5 ... 4.5 V ratiom. with flexible connector with humidity protection 5 VDC (4.75 ... 5.25)

Accessory Part Numbers
105598= O-ring FPM, -15 to +125 °C, -1 to 60 bar
105145= O-ring NBR, -25 to +85 °C, -1 to 60 bar
109338= O-ring FPM spec., -30 to +150 °C, -1 to 60 bar
105285= O-ring FPM, -15 to +125 °C, 100 to 160 bar
104952= O-ring NBR, -25 to +85 °C, 100 to 160 bar
109339= O-ring FPM spec., -30 to +150 °C, 100 to 160 bar
107397= Positioning ring (PPS) with cam
107926= Positioning ring (PPS) without cam
109225= Female Connector with three solder pads
112151= Clamp screw M20x1
112187= Insertion tool for clamp screw

