OEM Relative pressure measuring cell 509

Pressure range
0 ... 2.5 – 250 bar

Type 509 pressure measuring cells are based on ceramic technology developed by Huba Control, and used for the last 15 years in millions of applications. Due to the robust design of the ceramic cell there are no significant changes in the sensor characteristics when mounted by the customer. The pressure measuring cells are delivered either factory set or with TK zero point adjustment. You can choose between various versions including temperature measurement.

- Negligible temperature influence on accuracy
- No customer specific adjustment of zero point and temperature compensation necessary
- Easy mounting
- Overload secure up to rupture pressure
Technical Overview

Pressure range
Relative
0 ... 2.5 ~ 250 bar

Operating conditions
Medium
<table>
<thead>
<tr>
<th>Sensing Material</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPM</td>
<td>-15 ... +125 °C</td>
</tr>
<tr>
<td>NBR</td>
<td>-25 ... +85 °C</td>
</tr>
</tbody>
</table>

Temperature
<table>
<thead>
<tr>
<th>Range</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPM spec.</td>
<td>-30 ... +150 °C</td>
</tr>
<tr>
<td>Storage</td>
<td>-40 ... +130 °C</td>
</tr>
</tbody>
</table>

Temperature influences in range -30 ... +125 °C
<table>
<thead>
<tr>
<th>Point</th>
<th>Range</th>
<th>Adjustments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero point</td>
<td>max. 0.2% fs/10K with TC adjustment</td>
<td></td>
</tr>
<tr>
<td>Span</td>
<td>max. 1% fs/10K without TC adjustment</td>
<td></td>
</tr>
<tr>
<td>Zero point</td>
<td>max. 0.2% fs/10K with TC adjustment</td>
<td></td>
</tr>
<tr>
<td>Span</td>
<td>0.1% fs/10K without TC adjustment</td>
<td></td>
</tr>
</tbody>
</table>

Overload / Rupture pressure
- < 4 bar: 3 x fs
- > 6 bar: 2.5 x fs

Humidity protection
AHT, 20 days acc. DIN EN ISO 6270-2

Material in contact with the medium
Sensor
Ceramic Al₂O₃ (96%)
Sealing material
FPM, NBR, FPM spec.

Electrical data
Bridge impedance
10 kOhm ±20%
Power supply
3 ... 30 VDC
Insulation voltage
2000 VDC
ESD-handling
Necessary
Electromagnetic compatibility
The product is designed exclusively for installation in equipment. The customer is responsible for CE conformity.

Dynamic response
Response time
< 1 ms
Load cycle
< 100 Hz

Electrical connector
Bondpads (AgPd) RAST 1.27
Flexible connector RAST 2.54
Length 66 mm
Length 28 mm
Pin connector
Length 9 mm
Length 13 mm
Pin connector with temperature measuring (NTC 10kOhm ± 3%, β = 3800 K ± 3%)
Length 9 mm
Length 13 mm

Assembly / housing
According to recommendation of Huba Control with special assembly instructions

Weight
< 5 g

Packaging (multiple)
Cells with bondpads / Pin connector in covering box
5 Blister (96 pcs.) 480 pcs.
Cells with flexible connector in covering box
5 Blister (80 pcs.) 400 pcs.

Accuracy

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero point</td>
<td>mV / V</td>
<td>0.2 ± 0.2</td>
</tr>
<tr>
<td>Span at nominal pressure</td>
<td>mV / V</td>
<td>2.5 ± 1.5</td>
</tr>
<tr>
<td>Resolution</td>
<td>% fs</td>
<td>0.1</td>
</tr>
<tr>
<td>Linearity (BFSC)</td>
<td>max. % fs</td>
<td>± 0.3</td>
</tr>
<tr>
<td>Hysteresis and repeatability</td>
<td>max. % fs</td>
<td>± 0.2</td>
</tr>
<tr>
<td>Long term stability acc. to DIN EN 60770</td>
<td>% fs</td>
<td>± 0.5</td>
</tr>
</tbody>
</table>

Higher overload / higher rupture pressure on request
### Order code selection table

<table>
<thead>
<tr>
<th>Relative pressure</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>axial sealed</td>
<td>R</td>
</tr>
<tr>
<td>radial sealed</td>
<td></td>
</tr>
</tbody>
</table>

#### Pressure range

<table>
<thead>
<tr>
<th>Pressure range</th>
<th>1)</th>
<th>2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 ... 2.5 bar</td>
<td>1 4</td>
<td>1 5</td>
</tr>
<tr>
<td>0 ... 4 bar</td>
<td>1 6</td>
<td>1 7</td>
</tr>
<tr>
<td>0 ... 6 bar</td>
<td>1 8</td>
<td>1 9</td>
</tr>
<tr>
<td>0 ... 10 bar</td>
<td>1 0</td>
<td>1 1</td>
</tr>
<tr>
<td>0 ... 16 bar</td>
<td>1 2</td>
<td>1 3</td>
</tr>
<tr>
<td>0 ... 25 bar</td>
<td>1 4</td>
<td>1 5</td>
</tr>
<tr>
<td>0 ... 40 bar</td>
<td>1 6</td>
<td>1 7</td>
</tr>
<tr>
<td>0 ... 60 bar</td>
<td>1 8</td>
<td>1 9</td>
</tr>
<tr>
<td>0 ... 100 bar</td>
<td>1 0</td>
<td>1 1</td>
</tr>
<tr>
<td>0 ... 160 bar</td>
<td>1 2</td>
<td>1 3</td>
</tr>
<tr>
<td>0 ... 250 bar</td>
<td>1 4</td>
<td>1 5</td>
</tr>
</tbody>
</table>

#### Adjustable

- Factory adjusted only zero point and TC
- Factory adjusted only zero point

#### Electrical connection

| Bondpads | 1 |
| Flex connection | 1 G |
| Flex connection | 1 H |
| Pin connection | 2 |
| Pin connection with temperature measuring | 2 N |
| Pin connection with temperature measuring | 2 O |

#### Accessories

- O-ring FPM < 60 bar: 105598
- O-ring NBR < 60 bar: 105145
- O-ring FPM spec. < 60 bar: 109338
- O-ring FPM < 100 bar: 105285
- O-ring NBR < 100 bar: 104952
- O-ring FPM spec. < 100 bar: 102321
- Back-up ring teflon < 100 bar: 114660
- Clam screw M20x1: 112151
- Screw insert for clamp screw: 112187

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**Note:**

- Other pressure range on request
- TC = Temperature coefficient
- Accessories supplied loose
Dimensions in mm / Electrical connections

Pin connection 4 Pins

Pin connection 5 Pins with temperature measuring

without NTC

with NTC

Prevent repeated bending

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