SCP01 pressure sensors

Device features

- Small design
- Stainless steel measuring cell
- Stainless steel housing
- Shock and vibration proof
- Wide range of compatible substances
- High linearity
- Long-term stability
- Substance temperature -40 to 125 °C
- Up to 1000 bar
- High burst pressure
- 1 ms
- Eroding milling
- Encapsulated electronics

The SCP01 pressure sensor was designed to meet industrial requirements and is used in control, regulating and monitoring systems.

The SCP01 is characterised by its compact design, high linearity and excellent interference immunity. It is suitable for quick control solutions because of its fast response speed. The compact stainless steel housing is good for harsh environmental conditions. All components which come into contact with the substance are made from stainless steel. This feature, combined with the welded, thin-layer measuring cell, ensure optimal compatibility with the substance. The electronics are encapsulated for protection against vibration damage and moisture.

In order to ensure an exact pressure measurement and to avoid disturbances, an EDM hole is integrated. This minimises the cavitation of air and dirt, thus preventing the measuring cell from being influenced by pressure surges and pressure peaks.

This product is ideal for permanent series usage in hydraulic applications because of its long lifespan, high accuracy, high reliability and sturdy stainless steel construction.

Typical application range

- General machine construction
- Injection-mould machines
- Die-casting machines
- Press construction
- Test benches
- Tool-making machines
SCP01 pressure sensors

Technical data

### SCP01-xxx-x4-0x (bar / G1/4" BSPP)

<table>
<thead>
<tr>
<th>SCP01-</th>
<th>010</th>
<th>016</th>
<th>025</th>
<th>040</th>
<th>060</th>
<th>100</th>
<th>160</th>
<th>250</th>
<th>400</th>
<th>600</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure range $P_n$ relative 0... (bar)</td>
<td>10</td>
<td>16</td>
<td>25</td>
<td>40</td>
<td>60</td>
<td>100</td>
<td>160</td>
<td>250</td>
<td>400</td>
<td>600</td>
<td>1000</td>
</tr>
<tr>
<td>Overload pressure* $P_{\text{max}}$ relative (bar)</td>
<td>$2 \times P_n$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burst pressure** $P_{\text{burst}}$ relative (bar)</td>
<td>$4 \times P_n$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SCP01-xxxxP-x5-0x (psi / 1/4 NPT) & SCP01-xxxxP-x7-0x (psi / 7/16-20 UNF)

<table>
<thead>
<tr>
<th>SCP01-</th>
<th>0150P</th>
<th>0250P</th>
<th>1000P</th>
<th>3000P</th>
<th>5000P</th>
<th>9000P***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure range $P_n$ relative 0... (psi)</td>
<td>150</td>
<td>250</td>
<td>1000</td>
<td>3000</td>
<td>5000</td>
<td>9000</td>
</tr>
<tr>
<td>Overload pressure* $P_{\text{max}}$ relative (psi)</td>
<td>$2 \times P_n$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bursting pressure** $P_{\text{burst}}$ relative (psi)</td>
<td>$4 \times P_n$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* DIN EN 60770-1 / ** DIN 16086 / *** only 1/4 NPT

### General
- **Response time**: ≤1 ms
- **Long-term stability**: < 0.2 % FS / a
- **Load change**: > 20 million
- **Weight**: Approx. 80 g
- **MTTfd**: > 100 years

### Accuracy
- **Non-linearity**: BFSL according to IEC 61298-2
  - ≤ ± 0.25 %FS
- **Accuracy**: Type ≤ ± 0.25 %FS
  - Max. ≤ ± 0.5 %FS
- **Total error at 0 to 85 °C**: ≤ ± 1 %FS

### Temperature coefficient
- **Zero point**: Max. ≤ ± 0.2 %FS/10 K
- **Output range**: Max. ≤ ± 0.2 %FS/10 K

### Material
- **Housing**: Stainless steel 1.4404

### Process connection
- **G1/4A BSPP; DIN 3852 T11, Form E**: Sealing ring DIN 3869-14-FKM
- **SAE 7/16 UNF Male O ring**: O ring 8,12x1,83 FKM
- **Parts in contact with substances**: FKM, Stainless steel 1.4404, Stainless steel 1.4548

### Output signal
- **0 to 20 mA**: +9 to 36 VDC
- **4 to 20 mA (3-wire)**: +9 to 36 VDC
- **4 to 20 mA (2-wire)**: +9 to 36 VDC
- **0 to 10 V**: +14 to 36 VDC
SCP01 pressure sensors

Pin assignment

Device plug DIN EN 175301-803 Form A 4-pole (old 43650)

SCP01-xxx-xx-06

<table>
<thead>
<tr>
<th>PIN</th>
<th>0 to 20 mA</th>
<th>4 to 20 mA (3-wire)</th>
<th>4 to 20 mA (2-wire)</th>
<th>0 to 10 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>P signal</td>
<td>P signal</td>
<td>P signal</td>
<td>P signal</td>
</tr>
<tr>
<td>2</td>
<td>0 V / GND</td>
<td>0 V / GND</td>
<td>n.c.*</td>
<td>0 V / GND</td>
</tr>
<tr>
<td>3</td>
<td>V+</td>
<td>V+</td>
<td>V+</td>
<td>V+</td>
</tr>
</tbody>
</table>

Protection class: IP65

Circular connector M12x1 4-pole

SCP01-xxx-xx-07

<table>
<thead>
<tr>
<th>PIN</th>
<th>0 to 20 mA</th>
<th>4 to 20 mA (3-wire)</th>
<th>4 to 20 mA (2-wire)</th>
<th>0 to 10 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>V+</td>
<td>V+</td>
<td>V+</td>
<td>V+</td>
</tr>
<tr>
<td>2</td>
<td>P signal</td>
<td>P signal</td>
<td>P signal</td>
<td>P signal</td>
</tr>
<tr>
<td>3</td>
<td>0 V / GND</td>
<td>0 V / GND</td>
<td>n.c.*</td>
<td>0 V / GND</td>
</tr>
<tr>
<td>4</td>
<td>n.c.*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Material: Plastic PBT-GF30 Ultradur B4300 G6 black
Protection class: IP67

Device plug Industrial Micro DIN 9.4 mm

SCP01-xxx-xx-0C

<table>
<thead>
<tr>
<th>PIN</th>
<th>0 to 20 mA</th>
<th>4 to 20 mA (3-wire)</th>
<th>4 to 20 mA (2-wire)</th>
<th>0 to 10 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>P signal</td>
<td>P signal</td>
<td>P signal</td>
<td>P signal</td>
</tr>
<tr>
<td>2</td>
<td>V+</td>
<td>V+</td>
<td>V+</td>
<td>V+</td>
</tr>
<tr>
<td>3</td>
<td>n.c.*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Protection class: IP65

*) n.c. = not connected

Dimensioned drawings

SCP01-xxx-x4-0x

G1/4 BSPP ED

SCP01-xxxP-x5-0x

¼ NPT

SCP01-xxxP-x7-0x

SAE 7/16-20UNF

X1) = ED-seal

X1) = O ring 8.92 x 1.83
### SCP01 pressure sensors

#### Dimensioned drawings

- **SCP01-xxx-xx-07**
  - S1) = SW22

- **SCP01-xxx-xx-06**
  - S1) = SW22

- **SCP01-xxx-xx-0C**
  - S1) = SW22

#### Order code

**Pressure sensor SCP01 (bar)**

<table>
<thead>
<tr>
<th>Pressure range (bar)</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0…10 bar</td>
<td>010</td>
</tr>
<tr>
<td>0…16 bar</td>
<td>016</td>
</tr>
<tr>
<td>0…25 bar</td>
<td>025</td>
</tr>
<tr>
<td>0…40 bar</td>
<td>040</td>
</tr>
<tr>
<td>0…60 bar</td>
<td>060</td>
</tr>
<tr>
<td>0…100 bar</td>
<td>100</td>
</tr>
<tr>
<td>0…160 bar</td>
<td>160</td>
</tr>
<tr>
<td>0…250 bar</td>
<td>250</td>
</tr>
<tr>
<td>0…400 bar</td>
<td>400</td>
</tr>
<tr>
<td>0…600 bar</td>
<td>600</td>
</tr>
<tr>
<td>0…1000 bar</td>
<td>1000</td>
</tr>
</tbody>
</table>

**Output signal**

- 0 to 20 mA
- 4 to 20 mA (3-wire)
- 4 to 20 mA (2-wire)
- 0 to 10 V

**Connecting plug**

- Circular connector M12x1 4-pole
- Device connector DIN EN 175301-803 Form A 4-pole
- Device plug industrial micro DIN 9.4mm

**Pressure sensor SCP01 (psi)**

<table>
<thead>
<tr>
<th>Pressure range (psi)</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 150 psi</td>
<td>0150P</td>
</tr>
<tr>
<td>0 to 250 psi</td>
<td>0250P</td>
</tr>
<tr>
<td>0 to 1000 psi</td>
<td>1000P</td>
</tr>
<tr>
<td>0 to 3000 psi</td>
<td>3000P</td>
</tr>
<tr>
<td>0 to 5000 psi</td>
<td>5000P</td>
</tr>
<tr>
<td>0 to 9000 psi</td>
<td>9000P</td>
</tr>
</tbody>
</table>

**Output signal**

- 0 to 20 mA
- 4 to 20 mA (3-wire)
- 4 to 20 mA (2-wire)
- 0 to 10 V

**Process connection**

- SAE 7/16 UNF Male O ring (Pₚ max. = 400 bar)
- 1/4 NPT (Pₚ max. = 600 bar)

**Connecting plug**

- Circular connector M12x1 4-pole
- Device connector DIN EN 175301-803 Form A 4-pole

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**Catalogue 4083-3/UK**

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