# SCP01 pressure sensor

## 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...125 °C
- Pressure range up to 1000 bar
- High burst pressure
- Response time 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.

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
- Machine tool



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# SCP01 pressure sensor



## Technical data

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

| SCP01- | 010 | 016 | 025 | 040 | 060 | 100 | 160 | 250 | 400 | 600 | 1000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pressure range $P_n$ relative 0... (bar) | 10 | 16 | 25 | 40 | 60 | 100 | 160 | 250 | 400 | 600 | 1000 |
| Overload pressure* $P_{max}$ relative (bar) | 2 x $P_n$ | | | | | | | | | | 1.5 x $P_n$ |
| Burst pressure** $P_{burst}$ relative (bar) | 4 x $P_n$ | | | | | | | | | | 2.5 x $P_n$ |

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

| SCP01- | 0150P | 0250P | 1000P | 3000P | 5000P | 9000P*** |
|---|---|---|---|---|---|---|
| Pressure range $P_n$ relative 0... (psi) | 150 | 250 | 1000 | 3000 | 5000 | 9000 |
| Overload pressure* $P_{max}$ relative (psi) | 2 x $P_n$ | | | | | |
| Burst pressure** $P_{burst}$ relative (psi) | 4 x $P_n$ | | | | | |

* 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 acc. to IEC 61298-2 ≤± 0.25 %FS |
| Accuracy | Type ≤± 0.25 %FS<br>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 steel1.4404 |

| Ambient conditions | |
|---|---|
| Ambient temperature range | -40...+85 °C |
| Fluid temperature range | -40...+125 °C |
| Compensated range | 0...+85 °C |
| Storage temperature | -40...+125 °C |
| Vibration resistance | IEC 60068-2-6: 20 g |
| Shock resistance | IEC 60068-2-27: 500 g |
| **Electrical protection** | |
| Short-circuit, signal to GND, reverse polarity protection | |
| **EM compatibility** | |
| Disturbance emissions | EN 61000-6-3 |
| Resistance to interference | EN 61000-6-2 |
| **Process connection** | |
| Eroding milling | 0.6 mm |
| Tightening torque | Max. 35 Nm |

| Process connection | Seal | Parts in contact with substances |
|---|---|---|
| G1/4A BSPP; DIN 3852 T11, Form E | Sealing ring DIN 3869-14-FKM | FKM<br>Stainless steel 1.4404, Stainless steel 1.4548 |
| SAE 7/16 UNF Male O-ring | O-ring 8,12x1,83 FKM | FKM<br>Stainless steel 1.4404, Stainless steel 1.4548 |
| 1/4 NPT | | Stainless steel 1.4404, Stainless steel 1.4548 |

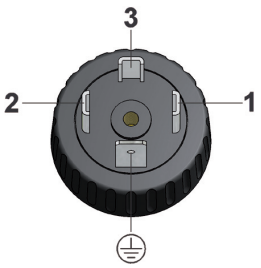
| Output signal | 0...20 mA | 2-wire 4...20 mA | 4...20 mA | 0.5...4.5 V (nom); 0...5 V; 1...6 V; 0...10 V |
|---|---|---|---|---|
| Auxiliary power $V_+$ | +9...36 VDC | +9...36 VDC | +9...36 VDC | +14...36 VDC |
| Max. load | ≥50...≤500 Ω<br>($V_+$ - 9 V) / 20 mA | ≥50...≤500 Ω<br>($V_+$ - 9 V) / 20 mA | ≥50...≤500 Ω<br>($V_+$ - 9 V) / 20 mA | ≥10 kΩ |

# SCP01 pressure sensor



## Pin assignment

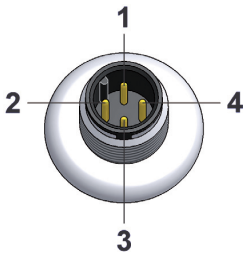
### Device plug DIN EN 175301-803 Form A 4-pole (old 43650)




| | SCP01-...-06 | | SCP01-...-06-MA | |
|---|---|---|---|---|
| **PIN** | **2-wire 4...20 mA** | **3-wire 0/4...20 mA; 0.5...4.5 V (nom); 0...5 V; 0...10 V; 1...6 V** | **2-wire 4...20 mA** | **3-wire 0/4...20 mA; 0...10 V** |
| 1 | P-signal | P-signal | $V_+$ | $V_+$ |
| 2 | n.c.* | 0 V / GND | n.c.* | 0 V / GND |
| 3 | $V_+$ | $V_+$ | P-signal | P-signal |
| ⏚ | n.c.* | | | |

Protection class IP65

### Circular connector M12x1 4-pole

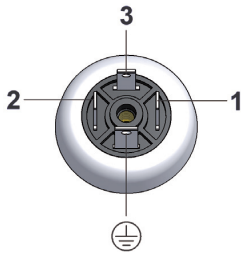



| | SCP01-...-07 | |
|---|---|---|
| **PIN** | **2-wire 4...20 mA** | **3-wire 0/4...20 mA; 0.5...4.5 (nom); 0...5 V; 0...10 V; 1...6 V** |
| 1 | $V_+$ | $V_+$ |
| 2 | P-signal | P-signal |
| 3 | n.c.* | 0 V / GND |
| 4 | n.c.** | |

Material Metall plug

Protection class IP67

### Device plug (L-Industrial 9.4 mm)



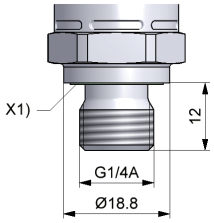

| | SCP01-...-0C | |
|---|---|---|
| **PIN** | **2-wire 4...20 mA** | **3-wire 0/4...20 mA; 0.5...4.5 (nom); 0...5 V; 0...10 V; 1...6 V** |
| 1 | P-signal | P-signal |
| 2 | $V_+$ | $V_+$ |
| 3 | n.c.* | |
| ⏚ | n.c.* | 0 V / GND |

Protection class IP65

*n.c. = do not connect
**n.c. = do not connect / When flying leeds are used on PIN 4, the PIN 4 has to be connected to GND.

**SCP01-...-x4-0x**

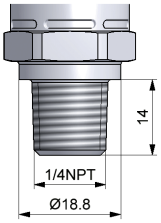
G1/4 BSPP ED




X1) = ED-seal

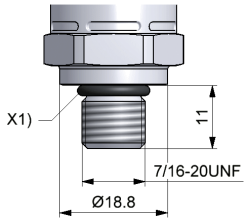
**SCP01-...-x5-0x**

¼ NPT




**SCP01-...-x7-0x**

SAE 7/16-20UNF




X1) = O ring 8.92 x 1.83

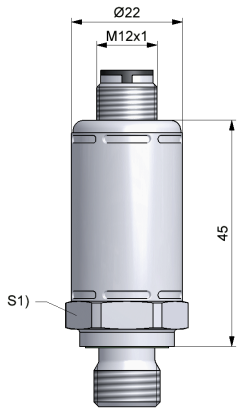


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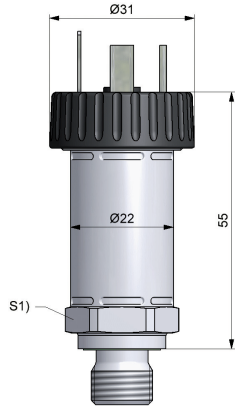


**SCP01-xxx-xx-07**



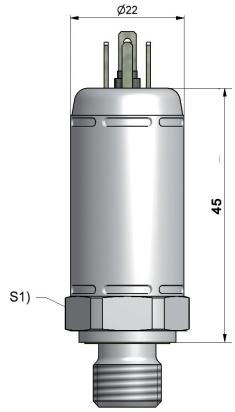

S1) = SW22

**SCP01-xxx-xx-06**




S1) = SW22

**SCP01-xxx-xx-0C**




S1) = SW22

## Order code

**Pressure sensor SCP01 (bar)** **SCP01-xxx-xx-0x**
**Pressure sensor SCP01 (bar) Marine SCP01-xxx-xx-0x-MA**
(approved by DNV/GL/ABS)

Pressure range (bar)

| | |
|---|---|
| 0…10 bar | **010** |
| 0…16 bar | **016** |
| 0…25 bar | **025** |
| 0…40 bar | **040** |
| 0…60 bar | **060** |
| 0…100 bar | **100** |
| 0…160 bar | **160** |
| 0…250 bar | **250** |
| 0…400 bar | **400** |
| 0…600 bar | **600** |
| 0…1000 bar | **1000** |

Output signal

| | |
|---|---|
| 0...20 mA | **1** |
| 4...20 mA (3-wire) | **2** |
| 4...20 mA (2-wire) | **3** |
| 0...5 V* | **A** |
| 0,5...4,5 V (nom)* | **S** |
| 1...6 V* | **B** |
| 0...10 V | **4** |

*Not approved for marine applications

Process connection

| | |
|---|---|
| G 1/4“ BSPP | **4** |

Connection plug

| | |
|---|---|
| Circular connector M12x1 4-pole | **7** |
| Device connector DIN EN 175301-803 Form A 4-pole | **6** |
| Device plug industrial micro DIN 9.4 mm | **C** |

**Pressure sensor SCP01 (psi)** **SCP01-xxxxP-xx-0x**

Pressure range (psi)

| | |
|---|---|
| 0...150 psi | **0150P** |
| 0...250 psi | **0250P** |
| 0...1000 psi | **1000P** |
| 0...3000 psi | **3000P** |
| 0...5000 psi | **5000P** |
| 0...9000 psi | **9000P** |

Output signal

| | |
|---|---|
| 4...20 mA (3-wire) | **2** |
| 4...20 mA (2-wire) | **3** |
| 0...10 V | **4** |

Process connection

| | |
|---|---|
| SAE 7/16 UNF Male O ring ($P_n$ max. = 400 bar) | **7** |
| 1/4 NPT ($P_n$ max. = 600 bar) | **5** |

Connecting plug

| | |
|---|---|
| Circular connector M12x1 4-pole | **7** |



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