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 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 Stainless steel 1.4404, Stainless steel 1.4548
SAE 7/16 UNF Male O-ring	O-ring 8,12x1,83 FKM	FKM 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 (V_+ - 9 V) / 20 mA	≥50...≤500 Ω (V_+ - 9 V) / 20 mA	≥50...≤500 Ω (V_+ - 9 V) / 20 mA	≥10 kΩ

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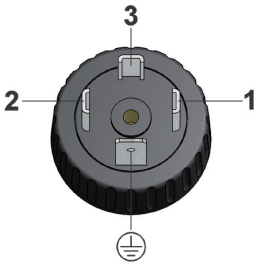
SCP01 pressure sensor

Pin assignment

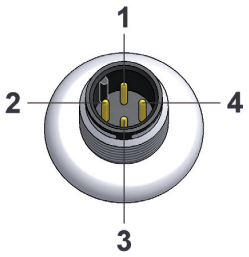
Device plug DIN EN 175301-803 Form A 4-pole (old 43650)



	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

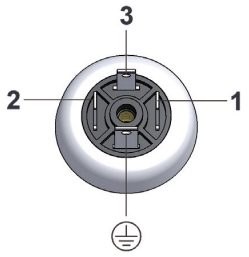


	SCP01-...-07	
PIN	**2-wire 4...20 mA**	**3-wire 0/4...20 mA; 0.5...4.5 (nom); 0...5 V; 0...10 V; 1...6 V**
1	V_+	V_+
2	P-signal	P-signal
3	n.c.*	0 V / GND
4	n.c.**	

Material Metall plug

Protection class IP67

Device plug (L-Industrial 9.4 mm)



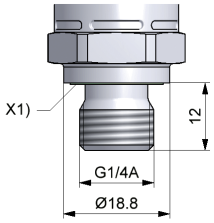
	SCP01-...-0C	
PIN	**2-wire 4...20 mA**	**3-wire 0/4...20 mA; 0.5...4.5 (nom); 0...5 V; 0...10 V; 1...6 V**
1	P-signal	P-signal
2	V_+	V_+
3	n.c.*	
⏚	n.c.*	0 V / GND

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

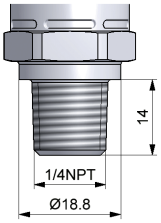
G1/4 BSPP ED



X1) = ED-seal

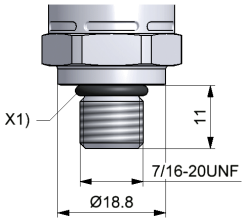
SCP01-...-x5-0x

¼ NPT



SCP01-...-x7-0x

SAE 7/16-20UNF



X1) = O ring 8.92 x 1.83

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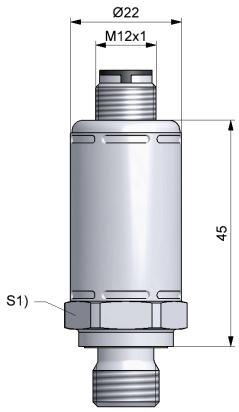
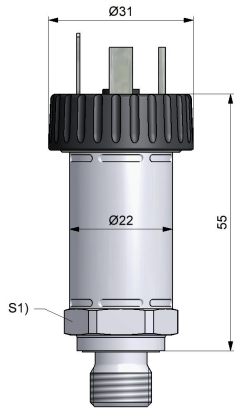
SCP01-xxx-xx-07



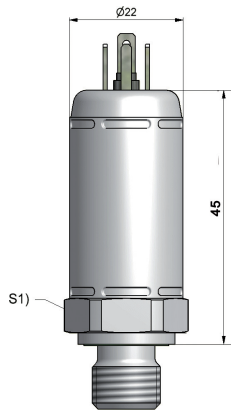
S1) = SW22

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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