SCP02 pressure sensor

Device features

- Small design
- Stainless steel measuring cell
- Stainless steel housing
- Shock and vibration proof
- High protection degree
- E1 road approval
- Substance temperature -40 to 150 °C
- Up to 1000 bar
- 1 ms
- Up to 36-V wiring systems



The SCP02 was designed specifically for the use in mobile working machines. The SCP02 has e1-approval and is manufactured with state of the art production methods according to ISO/TS 16949.

The shock and vibration resistance, the EMC characteristics, the power supply as well as the extended temperature range all were designed for this application type.

The SCP02 is suitable for quick control solutions because of its fast response speed.

The compact stainless steel housing with the plastic connector allows for use in harsh environmental conditions such as those in mobile hydraulics.

The components which come into contact with the substance are made from stainless steel (1.4548). This feature, combined with the welded, thin-layer measuring cell, ensures optimal compatibility with the substance.

An EDM hole has been added so that you get a precise, interference-free pressure measurement. This minimises the cavitation of air and dirt, thus preventing the measuring cell from being influenced by pressure surges and pressure peaks.

Typical application range

- Mobile hydraulics
- Transport vehicles
- Conveyor vehicles
- Commercial vehicles
- Automotive technology
- Brake systems
- Oil pressure
- Test equipment and technology
- Gearbox control

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SCP02 pressure sensor

Technical data

SCP02-	010	025	040	060	100	160	250	400	600	1000
Pressure range P_n relative 0... (bar)	10	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

* DIN EN 60770-1
** DIN 16086

General	
Response time	≤1 ms
Long-term stability	< 0.2 % FS / a
Load change	> 100 million
Weight	Approx. 55 g
MTTFd	> 100 years
Accuracy	
Linearity, pressure hysteresis and reproducibility	≤0.5 %FS
Complete accuracy	≤1.0 %FS (0...+80 °C) ≤1.5 %FS (-25...+100 °C) ≤2.5 %FS (-40...+125 °C)
Temperature coefficient	
Zero point	Max. ≤± 0.2 %FS/10 K
Output range	Max. ≤± 0.2 %FS/10 K
Material	
Housing	EN/DIN 1.4301
Electrical plug	Plastic PBT-GF30 Ultradur B4300 G6 black

Ambient conditions	
Ambient temperature range	-40...+125 °C
Fluid temperature range	-40...+150 °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 against GND/0V and protection against polarity reversal (not with ratiometric output)	
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	Max. pressure range P_n
G1/4A BSPP; DIN 3852 T11, Form E	Sealing ring DIN 3869-14-FKM	EN/DIN 1.4548 / FKM	1000 bar
SAE-4: 7/16-20 UNF O-ring	O-ring FKM	EN/DIN 1.4548 / FKM	400 bar
SAE 6: 9/16-18 UNF O-ring	O-ring FKM	EN/DIN 1.4548 / FKM	400 bar
G1/4 DIN ISO 228-1 O-ring	O-ring FKM	EN/DIN 1.4548 / FKM	600 bar
1/4 NPT		EN/DIN 1.4548	600 bar

Output signal P signal	2-wire 4...20 mA	0...5 V; 1...6 V 0.5...4.5 V nom.	0...10 V	0.5...4.5 V ratiometric
Auxiliary power V+	+9...36 VDC	+9...36 VDC	+14...36 VDC	5 V
Load Ω (Ohm)	≥50...≤500 Ω (V_+ - 9 V) / 20 mA	≥10 kΩ	≥10 kΩ	≥10 kΩ

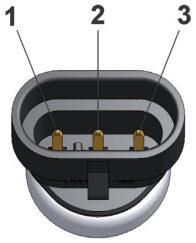
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SCP02 pressure sensor

Pin assignment

AMP Superseal 1.5

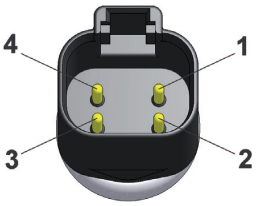
SCP02-xxx-xx-0A



PIN	2-wire 4...20 mA	0...5 V; 1...6 V; 0.5...4.5 V nom.; 0...10 V	0.5...4.5 V ratiometric
1	P-signal	0 V / GND	0 V / GND
2	n.c.*	P-signal	P-signal
3	V_+	V_+	V_+
Material	Plastic PBT-GF30 Ultradur B4300 G6 black		
Protection class	IP67		

DT04-4P

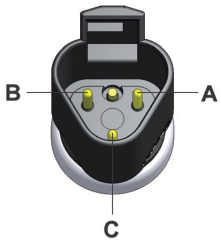
SCP02-xxx-xx-0D



PIN	2-wire 4...20 mA	0...5 V; 1...6 V; 0.5...4.5 V nom.; 0...10 V	0.5...4.5 V ratiometric
1	V_+	V_+	V_+
2	P-signal	0 V / GND	0 V / GND
3	n.c.*	P-signal	P-signal
4	n.c.*	n.c.*	n.c.*
Material	Plastic PBT-GF30 Ultradur B4300 G6 black		
Protection class	IP67		

DT04-3P

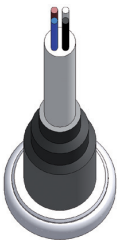
SCP02-xxx-xx-0E



PIN	2-wire 4...20 mA	0...5 V; 1...6 V; 0.5...4.5 V nom.; 0...10 V	0.5...4.5 V ratiometric
A	V_+	V_+	V_+
B	n.c.*	P-signal	P-signal
C	P-signal	0 V / GND	0 V / GND
Mate-rial	Plastic PBT-GF30 Ultradur B4300 G6 black		
Protection class	IP67		

2 m fixed cable

SCP02-xxx-xx-00



	2-wire 4...20 mA	0...5 V; 1...6 V 0.5...4.5 V nom.; 0...10 V	0.5...4.5 V ratiometric
bn	V_+	V_+	V_+
black	n.c.*	P-signal	P-signal
blue	P signal	0 V / GND	0 V / GND
Material	Plastic PBT-GF30 Ultradur B4300 G6 black		
Protection class	IP69k		

bn = brown-braun / bk = black-schwarz / bu = blue-blau
*n.c. = do not connect

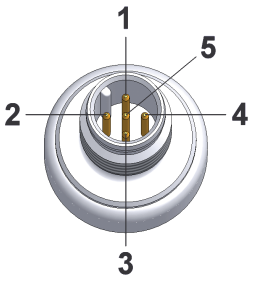
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SCP02 pressure sensor

Pin assignment

M12x1

SCP02-xxx-xx-x5



PIN	2-wire 4...20 mA	0...5 V; 1...6 V 0.5...4.5 V nom.; 0...10 V	0.5...4.5V ratiometric	CAN-Assignment
1	V_+	V_+	V_+	CAN shield, PE
2	P-signal	P-signal	P-signal	$+U_B$, +24 VDC
3	n.c.*	0 V / GND	0 V / GND	GND, 0 V
4	n.c.*	n.c.*	n.c.*	CAN_H, CAN+
5	n.c.*	n.c.*	n.c.*	CAN_L, CAN-

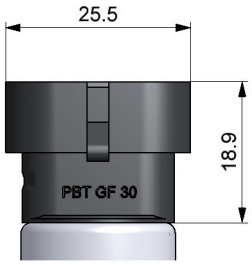
Material Plastic PBT-GF30 Ultradur B4300 G6 black

Protection class IP67

*n.c. = do not connect

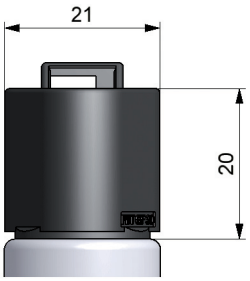
SCP02-xxx-xx-0A

AMP Superseal



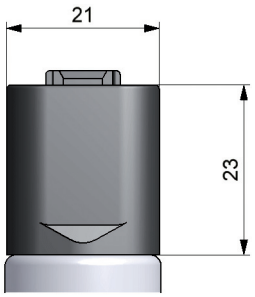
SCP02-xxx-xx-0D

DT04-4P



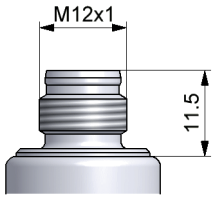
SCP02-xxx-xx-0E

DT04-3P



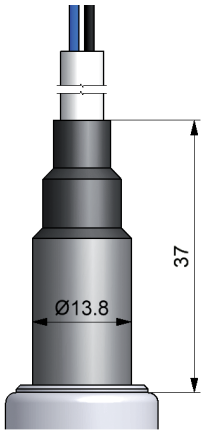
SCP02-xxx-xx-05

M12x1



SCP02-xxx-xx-00

Stationary cable (2 m)

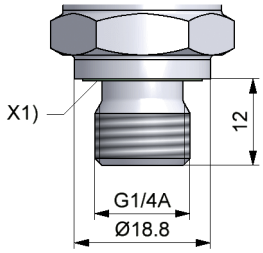


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SCP02 pressure sensor

SCP02-xxx-x4-0x

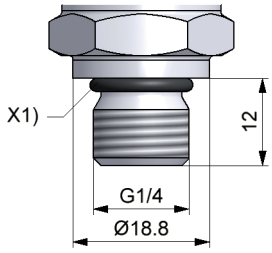
G 1/4, DIN 3852 T 11 (Form E)



X1) = ED-seal

SCP02-xxx-x8-0x

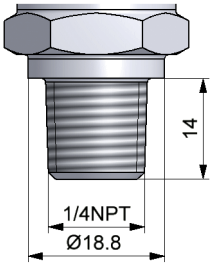
G1/4 O-ring



X1) = O-ring

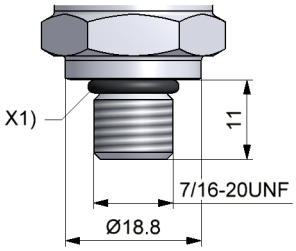
SCP02-xxx-x5-0x

1/4 NPT



SCP02-xxx-x7-0x

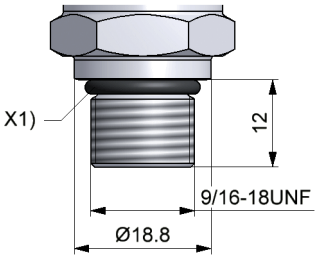
SAE 04 - O-ring



X1) = O-ring 8.92x1.83

SCP02-xxx-x6-0x

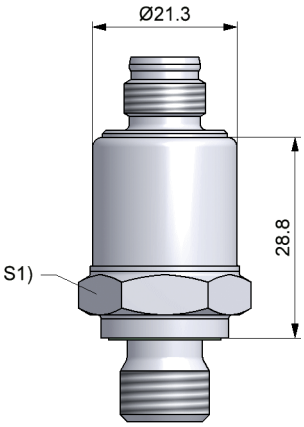
SAE 06 - O-ring



X1) = O-ring 11.89x1.98

SCP02-xxx-xx-0x

M12x1



S1) = SW22

SCP02 pressure sensor

Order code

Pressure sensor SCP02 — **SCP02-xxxx-xx-0x**

Pressure range

0…10 bar	010
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

4...20 mA (2-wire)	3
4...20 mA (3-wire)	2
0...10 V	4
0...5 V	A
1...6 V	B
0.5...4.5 V (ratiometric)	R
0.5...4.5 V (nom.)	S
CAN	K

Process connection

G1/4 BSPP	4
1/4 NPT (P_n max. = 600 bar)	5
9/16-18 UNF, SAE 6 O-ring (P_n max. = 400 bar)	6
7/16-20 UNF SAE-4 O-ring (P_n max. = 400 bar)	7
G1/4 O-ring (P_n max. = 600 bar)	8

Connecting plug

Stationary cable 1 m	0
Circular connector M12x1 5-pole	5
Device plug AMP Superseal	A
Device plug DT04 4-pole	D
Device plug DT04 3 pole	E

Connection cable and single plug

Connection cable, assembled (open cable end) — **SCK-400-xx-xx**

Cable length (m)

2 m	02
5 m	05
10 m	10

Connecting plug

M12 cable jack; straight	45
M12 cable jack; 90° angled	55

Single connector

M12 cable jack; straight	**SCK-145**
M12 cable jack; 90° angled	**SCK-155**

Order example

SCP02-400-34-05

Single sensor
Pressure range 400 bar
Output signal 4 to 20 mA (2-wire)
G1/4 BSPP
M12 connecting plug 5-pole