SCP03 pressure sensor

Device features

- Monolithic design
  - No internal seal
  - No material mix
  - No weld seam
- High media compatibility
- Measuring range from -1 to 1000 bar
- Negative pressure resistant
- Many connections



The SCP03 is a pressure sensor for liquid and gaseous media.

The digitally calibrated piezoresistive measuring cell detects negative pressures from -1 bar up to high pressures of 1000 bar.

The pressure connection in contact with the medium has a monolithic design. This eliminates the need for internal seals and weld seams. A mix of materials is avoided.

The resulting low permeability in combination with the stainless steel results in broad media resistance.

The compact stainless-steel housing allows space-saving use, even in harsh environmental conditions. With its wide range of pressure ranges, output signals and connectors, the SCP03 can be used in industrial and mobile applications.

The packaging variant optimized for OEM's is environmentally friendly, cost-optimized and facilitates handling.

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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SCP03 pressure sensor

Technical data

SCP03-	004R	010R	010R	025R
Pressure range -1 ... bar P_n relative (-14.5 ... psi)	3 (43,5)	9 (130)	15 (218)	24 (348)

SCP03-	004	010	016	025	035	040	060	100	250	400	500	600	1000
Pressure range P_n relative 0 ... bar / (psi)	4 (58)	10 (145)	16 (232)	25 (363)	35 (500)	40 (580)	60 (870)	100 (1450)	250 (3626)	400 (5800)	500 (7300)	600 (8702)	1000 (14,503)
Overload pressure P_{max} DIN EN 60770-1 (bar) relative	$2 \times P_n$												
Burst pressure P_{burst} DIN EN 60770-1 (bar) relative	$3 \times P_n$												

SCP03-	0150P	0250P	1000P	3000P	5000P	9000P
Pressure range P_n relative 0... (psi)	150	250	1000	3000	5000	9000
Overload pressure* P_{max}	$2 \times P_n$					
Burst pressure** P_{burst}	$3 \times P_n$					

General		
Response time	≤1 ms	
Load change	> 100 million	
Material Housing	EN/DIN 1.4301	
Material Electr. Connector	PBT-GF30 black	
Weight	Approx. 80 g	
Accuracy parameter		
Non-linearity + Hysteresis + Repeatability	≤0.3 %FS	
Long-term stability	≤1.0 %FS / year	
Overall Accuracy		
	< 10 bar (145 psi)	≥ 10 bar (145 psi)
@ 25°C	≤ 0.5 %FS	≤ 0.5 %FS
@ 0°C...+85°C	≤ 2 %FS	≤ 1 %FS

Ambient conditions	
Media temperature	-40...+125 °C / (-40...257°F)
Operation / Ambient temperature	-40...+105 °C / (-40...221°F)
Storage temperature	-40...+125 °C / (-40...257°F)
Vibration resistance	IEC 60068-2-6: 20 g
Shock resistance	IEC 60068-2-27: 1000 g
Conformity	
CE	EN 61326-1 EN61326-3-1
RoHs	Yes
MTTFd	> 100 years

Process connection	Seal	Wetted parts
G1/4A BSPP; DIN 3852 T11, Form E	DIN 3869-14-FKM	EN/DIN 1.4404 / FKM
SAE-4: 7/16-20 UNF O-ring	FKM	EN/DIN 1.4404 / FKM
SAE 6: 9/16-18 UNF O-ring	FKM	EN/DIN 1.4404 / FKM
G1/4 DIN ISO 228-1 O-ring	FKM	EN/DIN 1.4404 / FKM
1/4 NPT		EN/DIN 1.4404

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SCP03 pressure sensor

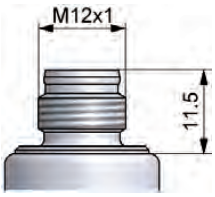
Pin assignment

Output signal	(2 wire) 4....20 mA	0...20 mA 4...20 mA	0.5...4.5 V 0...5 V	1...6 V 0...10 V	0.5...4.5 V ratio.
Supply Voltage V_+	10...32 VDC	12...32 VDC	8...32 VDC	12...32 VDC	5 V ±10%
Load $_{max}$	≤ (V+ - 10V) / 20 mA [kΩ]		4.7 [kΩ]		
Overvoltage	50 VDC				
Short circuit	Yes				
Rever polarity	Yes				
Signal on GND / V_+	Yes				
M12x1 4-pole					
Pin 1	V_+				
Pin 2	P-Signal				
Pin 3	n.c.	0 V / GND			
Pin 4	n.c.	n.c.			
IP 67					
DIN EN 175301-803 Form A 4-pole (old 43650)					
Pin 1	P-Signal				
Pin 2	n.c	0 V / GND			
Pin 3	V_+				
Pin 4 / GND	n.c				
IP 65					
AMP Superseal 1.5					
Pin 1	P-Signal	0 V / GND			
Pin 2	n.c	P-Signal			
Pin 3	V_+				
IP 65					
DT04-4P					
Pin 1	V_+				
Pin 2	P-Signal	0 V / GND			
Pin 3	n.c	P-Signal			
Pin 4 / GND	n.c				
IP 65					
DT04-3P					
A	V_+				
B	n.c	P-Signal			
C	P-Signal	0 V / GND			
IP 65					
Junior Timer					
Pin 1	P-Signal	0 V / GND			
Pin 2	n.c	P-Signal			
Pin 3	V_+				
IP 65					
Cable					
Bn	V_+				
Black	P-Signal				
Blue	n.c	0 V / GND			
IP 69K					

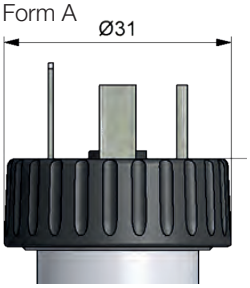
SCP03 pressure sensor

Pin assignment

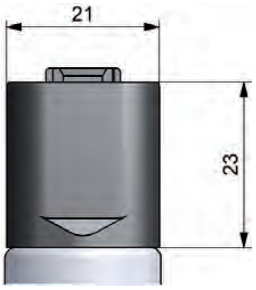
SCP03-...-..-07
M12 4P



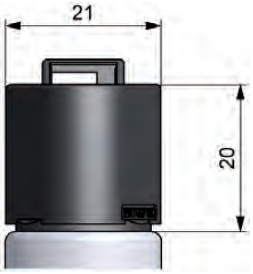
SCP03-...-..-06
DIN EN 175301-803
Form A

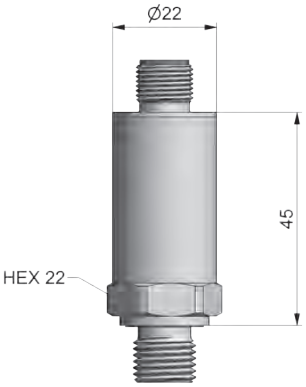


SCP03-...-..-0D
DT04 4P

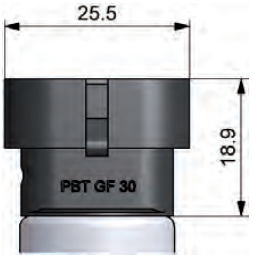


SCP03-...-..-0E
DT04 3P

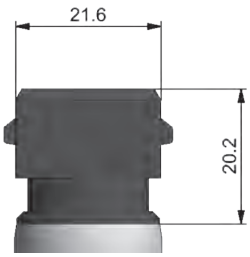




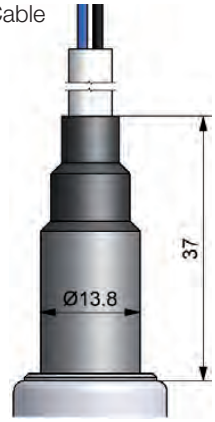
SCP03-...-..-0A
Superseal



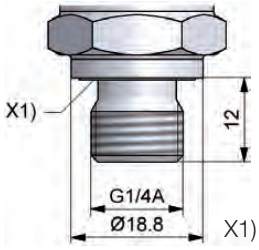
SCP03-...-..-0J
Junior Timer 3P



SCP03-...-..-00
Cable

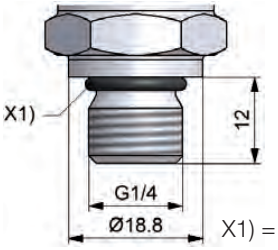


SCP03-xxx-x4-0x
G 1/4, DIN 3852 T 11 (Form E)



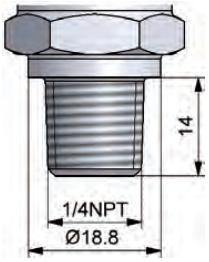
X1) = ED-seal

SCP03-xxx-x8-0x
G 1/4 O-ring

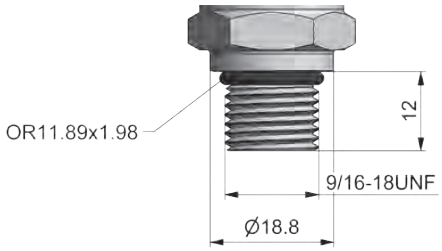


X1) = O-ring

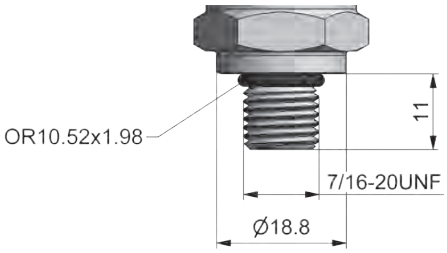
SCP03-xxx-x5-0x
1/4 NPT



SCP03-xxx-x6-0x
SAE 06 - O-ring



SCP03-xxx-x7-0x
SAE 04 - O-ring



SCP03 pressure sensor

Order code

Pressure sensor SCP03 — **SCP03-xxx-xx-xxQ8**

Pressure range

-1...3 bar	004R
-1...9 bar	010R
-1...15 bar	016R
-1...24 bar	025R
0...4 bar	004
0...10 bar	010
0...16 bar	016
0...25 bar	025
0...35 bar	035
0…60 bar	060
0…100 bar	100
0…160 bar	160
0…250 bar	250
0…400 bar	400
0…500 bar	500
0...600 bar	600
0...1000 bar	1000
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

0...20 mA	1
4...20 mA (3-wire)	2
4...20 mA (2-wire)	3
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

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

Damping

Without damping	O
With damping	D

Connecting plug

Device connector DIN EN 175301-803 Form A 4-pole	6
Circular connector M12x1 4-pole	7
Stationary cable 2 m	0
Device plug AMP Superseal	A
Device plug DT04 4 pole	D
Device plug DT04 3 pole	E
Junior Timer 3-pole	J

Order quantity

Minimum order qty:

Q8: Multiple of 50 pcs.

Available single versions

Pressure sensor SCP03 Industrial — **SCP03-xxx-xx-0x**

Pressure range

0...10 bar	010
0...25 bar	025
0…60 bar	060
0…250 bar	250
0…400 bar	400
0...600 bar	600

Output signal

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

Process connection

G1/4 BSPP	4

Connecting plug

Device connector DIN EN 175301-803 Form A 4-pole	6
Circular connector M12x1 4-pole	7

Pressure sensor SCP03 Mobile — **SCP03-xxx-xx-0x**

Pressure range

0...10 bar	010
0...25 bar	025
0…60 bar	060
0…250 bar	250
0…400 bar	400
0...600 bar	600

Output signal

4...20 mA (2-wire)	3
0.5...4.5 V (ratiometric)	R

Process connection

G1/4 BSPP	4

Connecting plug

Device plug DT04 4 pole	D

Order example

150x SCP03-400-34-07Q8

150 Single sensors (multiple of 50's)

Pressure range 0...400 bar

Output signal 4 to 20 mA (2-wire)

G1/4 BSPP

Without damping

M12 connecting plug 4-pole