SCP04 pressure sensor

Device features

- Monolithic design
  - No internal seal
  - No material mix
  - No weld seam
- EC79/2009 pending
- High media compatibility (hydrogen)
- Measuring range from 4 to 1000 bar / 58 to 14,504 psi
- Negative pressure resistant
- Special connections

The SCP04 pressure sensor is desgined to meet the chemical and physical requirements of hydrogen applications.

The digitally calibrated piezoresistive stainless steel measuring cell detects pressures from 4 bar up to 1000 bar. The connection to the connection pins is made via a special bonding and thus remains stable even at low temperatures, shocks or vibrations.

The measuring cell and the pressure connection in contact with the medium are made in one piece. This eliminates the need for internal seals and weld seams. A mix of materials is avoided. The construction was designed to prevent embrittlement of the metal surface by ionized hydrogen.

The monolithic design eliminiates leakage due to material fatigue at internal seals. The SCP04 has no pressure transfer fluid, no large pressurized areas, and is vacuum-tight and elastomer-free.

The resulting low permeability in combination with the stainless steel results in a wide media resistance. The process connections have been designed to be gasket-free for hydrogen applications.

The compact stainless steel housing allows space-saving use, even under harsh environmental conditions.

Typical application range

- Hydrogen applications

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Technical data

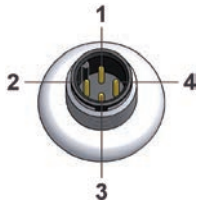
SCP04-	004	025	400	500	600	1000
Pressure range P_n relative 0 ... bar / (psi)	4 (58)	25 (363)	400 (5800)	500 (7300)	600 (8702)	1000 (14,504)
Overload pressure P_{max} DIN EN 60770-1 (bar) relative	2 x P_n					1,4 x P_n
Burst pressure P_{burst} DIN EN 60770-1 (bar) relative	3 x P_n					

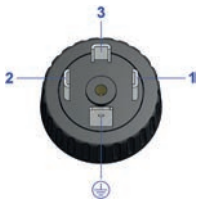
General		
Response time	≤1 ms	
Load change	> 100 million	
Material Housing	EN/DIN 1.4301	
Weight	Approx. 120 g	
Accuracy parameter		
Non-linearity + Hysteresis + Repeatability	≤0.3 %FS	
Long-term stability	≤1.0 %FS / year	
Overall Accuracy		
	< 10 bar (145 psi)	≥ 10 bar (145 psi)
@ 25°C	≤ 0.5 %FS	≤ 0.5 %FS
@ 0°C...+80°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	Wetted parts
7/16”-20 UNF	316L; EN/DIN 1.4404
G1/4 B (EN 837)	316L; EN/DIN 1.4404
1/4 NPT	316L; EN/DIN 1.4404

Pin assignment





Output signal	(2 wire) 4....20 mA	0...10 V	0.5...4.5 V ratio.
Supply Voltage V_+	10...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			
DT04-3P			
A	V_+		
B	n.c	P-Signal	
C	P-Signal	0 V / GND	
IP 65			

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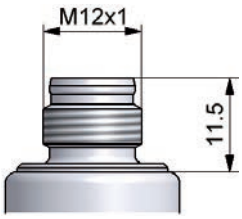
Pin assignment

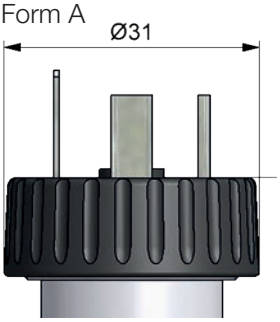
SCP04-...-..-07

M12 4P



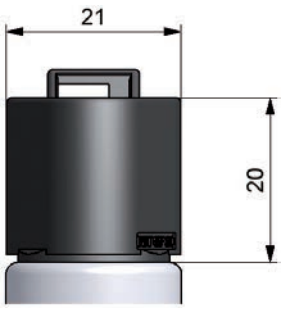
SCP04-...-..-06

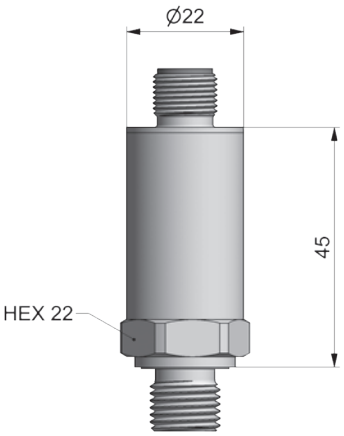
DIN EN 175301-803
Form A



SCP04-...-..-0E

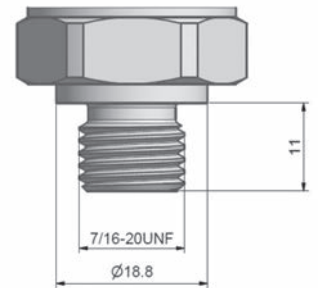
DT04 3P





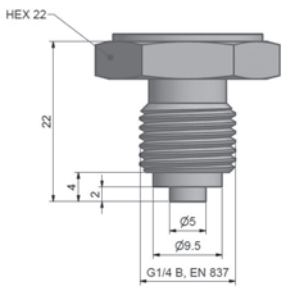
SCP04-xxx-x4-0x

7/16"-20UNF-2A



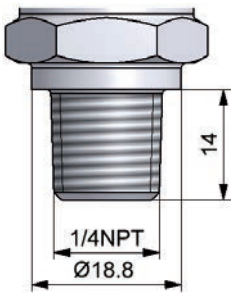
SCP04-xxx-x5-0x

G 1/4 B (EN 837)



SCP04-xxx-x6-0x

1/4 NPT



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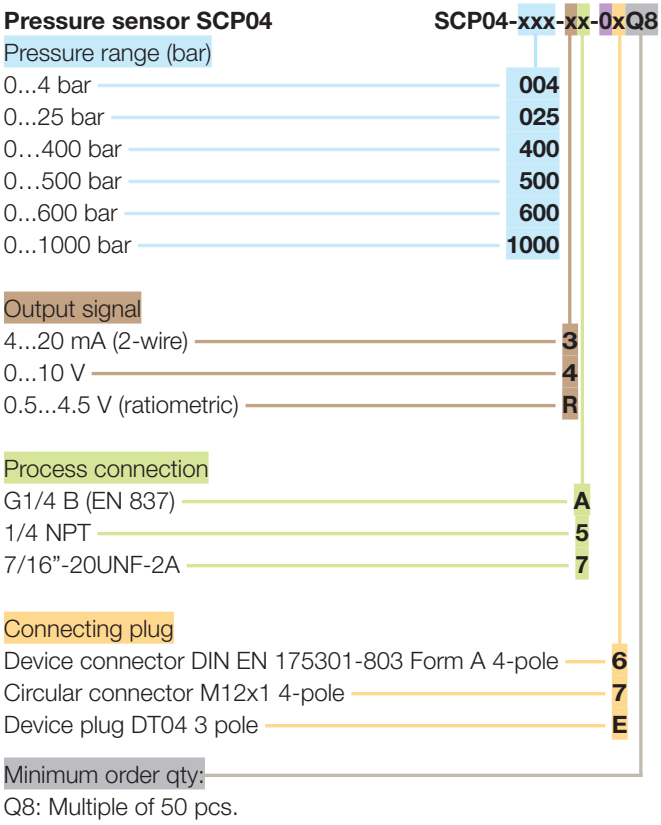
Order code



Additional Variances

ATEX, IECEx, CSA	available
Individual Pressure-ranges / calibration	available
Additional Ports	available
Individual Pin configuration	available
Brand label	available