

## CCP-P-210



- electronic pressure switch without media isolation
- nominal pressure: from 0...10 mbar up to 0...1 bar
- 1 or 2 independent PNP contacts, freely configurable
- output signals: 2-wire: 4...20 mA; 3-wire: 0/4...20 mA / 0...10V
- stainless steel sensor
- accuracy 0.35 % / 0.5 % span
- indication of measured values on a 4-digit LED display
- rotatable and configurable display module



The electronic pressure switch **CCP-P-210** is the successful combination of intelligent pressure switch and digital display and has been specially designed for measuring of very small overpressure and for vacuum applications. Permissible media are gases, pressurized air and thin non aggressive media. As standard the CCP-P-210 offers a PNP-contact and a rotatable display module. Additional features like e.g. an analogue output complete the profile.

### PREFERRED AREAS OF USE ARE



Plant and Machine Engineering



Heating and Air Conditioning



Laboratory Techniques

### TECHNICAL DATA

Input pressure range													
Nominal pressure gauge	[mbar]	-1000 ... 0	10	16	25	40	60	100	160	250	400	600	1000
Overpressure	[bar]	3	0.2	0.2	0.5	0.5	0.5	1	2	3	3	3	3
Burst pressure	[bar]	5	0.3	0.3	0.75	0.75	0.75	1.5	3	5	5	5	5

Contact <sup>1</sup>	
Standard	1 PNP contact
Options	2 independent PNP contacts
Max. switching current	4 ... 20 mA / 2- and 3-wire: contact rating 125 mA, short-circuit resistant; $V_{switch} = V_S - 2V$ 0 ... 10 V / 3-wire: contact rating 125 mA, short-circuit resistant
Accuracy of contacts <sup>2</sup>	standard: $\pm 0.35\%$ span nominal pressure $\leq 100$ mbar: $\pm 0.5\%$ span
Repeatability	$\pm 0.1\%$ span
Switching frequency	max. 10 Hz
Switching cycles	$> 100 \times 10^6$
Delay time	0 ... 100 sec

<sup>1</sup> max. 1 contact for 2-wire current signal with plug ISO 4400  
no contact possible with 3-wire in combination with plug ISO 4400

Analogue output (optionally) / Supply	
2-wire current signal	4 ... 20 mA / $V_S = 15 \dots 36 V_{DC}$ permissible load: $R_{max} = [(V_S - V_{Smin}) / 0,02 A] W$ response time: < 10 msec
3-wire current signal	4 ... 20 mA / $V_S = 19 \dots 30 V_{DC}$ adjustable (turn-down of span max. 5:1) <sup>3</sup> permissible load: $R_{max} = 500 W$ response time: < 3 sec
3-wire voltage signal without analogue output	0 ... 10 V / $V_S = 15 \dots 36 V_{DC}$ permissible load: $R_{min} = 10 k W$ response time: < 3 msec
Accuracy <sup>2</sup>	standard: $\pm 0.35\%$ span nominal pressure $\leq 100$ mbar: $\pm 0.5\%$ span

<sup>2</sup> accuracy according to EN IEC 62828-2 – limit point adjustment (non-linearity, hysteresis, repeatability)  
<sup>3</sup> with turn-down of span the analogue signal is adjusted automatically to the new measuring range

Thermal effects (0 set and Span)					
Nominal pressure $P_N$	[mbar]	-1000 ... 0	$\leq 100$	$\leq 400$	$> 400$
Tolerance band	[% span]	$\leq \pm 0.75$	$\leq \pm 1.5$	$\leq \pm 1$	$\leq \pm 0.75$
in compensated range	[°C]	-20 ... 85	0 ... 50	0 ... 70	-20 ... 85

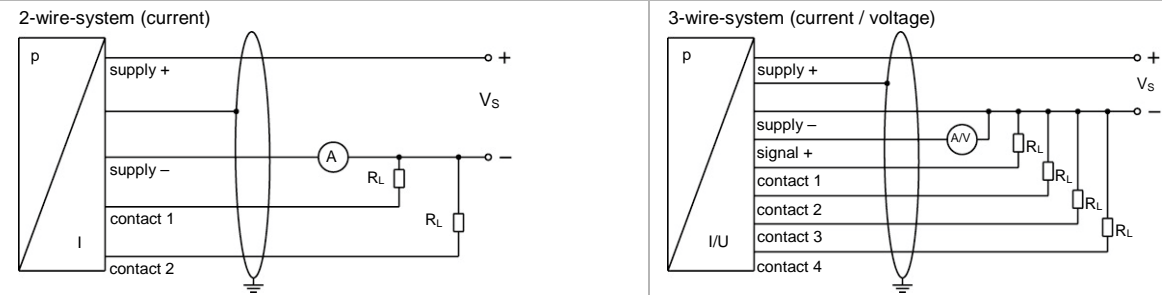
Permissible temperatures			
Permissible temperatures	medium: -40 ... 125 °C	electronics / environment: -40 ... 85 °C	storage: -40 ... 100 °C



<b>Electrical protection</b>		
Short-circuit protection	permanent	
Reverse polarity protection	no damage, but also no function	
Electromagnetic compatibility	emission and immunity according to EN 61326	
<b>Mechanical stability</b>		
Vibration	10 g RMS (25 ... 2000 Hz)	according to DIN EN 60068-2-6
Shock	500 g / 1 msec	according to DIN EN 60068-2-27
<b>Materials</b>		
Pressure port	stainless steel 1.4404 (316L)	
Housing	stainless steel 1.4404 (316L)	
Display housing	PA 6.6, Polycarbonate	
Seal (media wetted)	FKM	
Sensor	stainless steel 1.4404 (316L), silicon, Epoxy or RTV, glass	
Media wetted parts	pressure port, seal, sensor	
<b>Miscellaneous</b>		
Display	4-digit, red 7-segment-LED display, digit height 7 mm, range of indication -1999 ... +9999; accuracy 0.1 % ± 1 digit; digital damping 0.3 ... 30 sec (programmable); measured value update 0.0 ... 10 sec (programmable)	
Current consumption (without contacts)	2-wire signal output current:	max. 25 mA
	3-wire signal output current:	approx. 45 mA + signal current
	3-wire signal output voltage:	approx. 45 mA
Ingress protection	IP 65	
Installation position	any	
Weight	approx. 180 g	
Operational life	> 100 x 10 <sup>6</sup> cycles	
CE-conformity	EMC Directive: 2014/30/EU	

**ELECTRICAL CONNECTION**

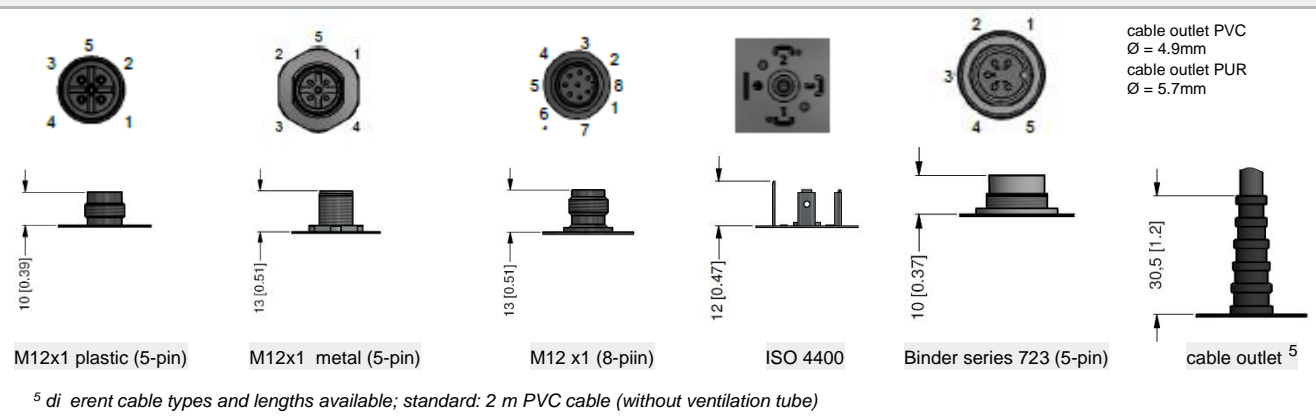
**Wiring diagram/s**



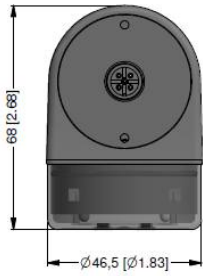
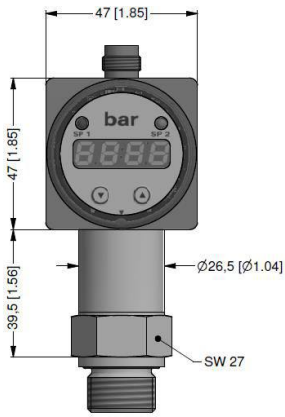
**Pin configuration**

Electrical connection	M12x1 plastic (5-pin)	M12x1 metal (5-pin)	M12x1 plastic (8-pin)	ISO 4400	Binder series 723 (5-pin)	cable colours (DIN 47100)
Supply +	1	1	1	1	1	wh (white)
Supply -	3	3	3	2	3	bn (brown)
Signal + (only 3-wire)	2	2	2	3	2	gn (green)
Contact 1	4	4	4	3	4	gy (grey)
Contact 2	5	5	5	-	5	pk (pink)
Contact 3	-	-	6	-	-	bu (blue)
Contact 4	-	-	7	-	-	rd (red)
Shield	via pressure port	plug housing/pressure port	via pressure port	ground contact	plug housing/pressure port	gnye (green-yellow)

**Electrical connections (dimensions in mm)**

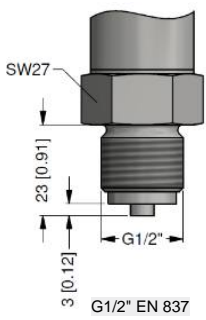


DIMENSION DRAWINGS

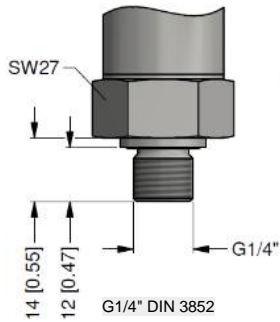


rotatability of display module

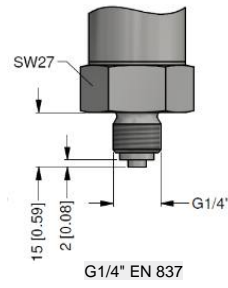
MECHANICAL CONNECTION



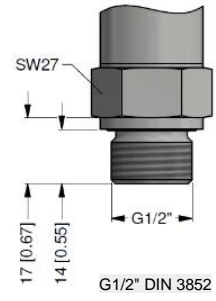
G1/2" EN 837



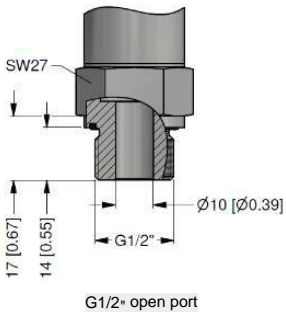
G1/4" DIN 3852



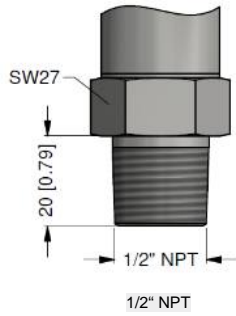
G1/4" EN 837



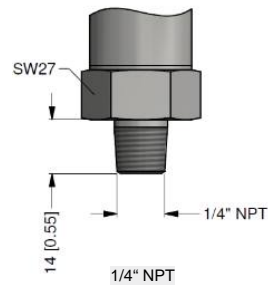
G1/2" DIN 3852



G1/2" open port



1/2" NPT



1/4" NPT

metric threads and other versions on request



ORDER CODE

CCP-P-210-    -     -   -   -     -     -     -

<b>Pressure</b>															
Gauge															
Input [mbar]	7	8	A												
0 ... 10				0	1	0	0								
0 ... 16				0	1	6	0								
0 ... 25				0	2	5	0								
0 ... 40				0	4	0	0								
0 ... 60				0	6	0	0								
0 ... 100				1	0	0	0								
0 ... 160				1	6	0	0								
0 ... 250				2	5	0	0								
0 ... 400				4	0	0	0								
0 ... 600				6	0	0	0								
0 ... 1000				1	0	0	1								
-1000...0				X	1	0	2								
Customer				9	9	9	9								
<b>Electrical output / Analog output</b>															
4 ... 20 mA / 2-wire											1				
0 ... 10 V / 3-wire											3				
4 ... 20 mA / 3-wire (adjustable)											7				
Customer											9				
<b>Contact</b>															
1 switching contact (version 3-wire only with 5-pin connector) <sup>1</sup>												1			
2 switching contacts (only with 5-pin connector) <sup>1</sup>												2			
<b>Accuracy</b>															
0,5 % (P <sub>N</sub> 0,4 bar)												5			
0,35 % (P <sub>N</sub> > 0,4 bar)												3			
Customer												9			
<b>Electrical connection</b>															
Connector DIN 43650 (ISO 4400) (IP 65) <sup>1</sup>										1	0	0			
Connector M 12 x 1 (5-pin) (IP 65)										N	0	1			
Connector M 12 x 1 (5-pin) (IP 65) - metal										N	1	1			
Cable outlet incl.cable (standard: 2 m PVC cable without ventilation tube, permissible temperature: -5 ... 70 °C)										T	A	0			
Customer										9	9	9			
<b>Mechanical connection</b>															
G 1/2" DIN 3852											1	0	0		
G 1/2" EN 837											2	0	0		
G 1/4" DIN 3852											3	0	0		
G 1/4" EN 837											4	0	0		
G 1/2 " DIN 3852 open port											H	0	0		
1/2" NPT											N	0	0		
1/4" NPT											N	4	0		
Customer											9	9	9		
<b>Seals</b>															
Viton (FKM) (P <sub>N</sub> 40 bar)													1		
Customer													9		
<b>Special version</b>															
Standard													0	0	0
Customer													9	9	9

1 - with connector ISO 4400 and output 2-wire version only max. 1 contact possible; with 3-wire version no contact possible

Manufacturer reserves the right to change sensor specifications without further notice.

