

# DS 217

## Pressure Switch with welded Stainless Steel Sensor

### Characteristics:

- ▶ accuracy according to EN IEC 62828-2: 0.5 % span
- ▶ nominal pressure ranges from 0 ... 6 bar up to 0 ... 600 bar
- ▶ 1 analogue output and up to 2 contacts
- ▶ display and housing rotatable
- ▶ suitable for oxygen applications



### Technical Data



Input pressure range												
Nominal pressure gauge [bar]	6	10	16	25	40	60	100	160	250	400	600	
Overpressure (static) [bar]	12	20	32	50	80	120	200	320	500	800	1 200	
Burst pressure $\geq$ [bar]	30	50	80	125	200	300	500	800	1 400	2 000	3 000	
Vacuum resistance	unlimited											
Contact												
Number / type	standard: 1 PNP contact, 1 analogue output optionally: max. 2 independent PNP contact; 1 analogue output											
Switching current	standard: contact rating max. 125 mA, short-circuit resistant											
Accuracy of switching points <sup>1</sup>	$\leq \pm 1.5$ % span											
Repeatability	$\leq \pm 0.5$ % span											
Switching frequency	max. 10 Hz											
Switching cycles	$> 100 \times 10^6$											
Delay time	0 ... 100 sec											
Analogue output (optionally) / Supply												
3-wire current signal	4 ... 20 mA / $V_S = 24 V_{DC} \pm 10$ %											
Accuracy <sup>1</sup>	$\leq \pm 0.5$ % span											
Permissible load	3-wire: $R_{max} = 500 \Omega$											
Influence effects	supply: 0.05 % span / 10 V load: 0.05 % span / k $\Omega$											
Measuring rate	10 Hz											
<sup>1</sup> accuracy according to EN IEC 62828-2 – limit point adjustment (non-linearity, hysteresis, repeatability)												
Thermal effects (Offset and Span) / Permissible temperatures												
Thermal error	$\leq \pm 0.5$ % span / 10 K in compensated range -25 ... 85 °C											
Permissible temperatures	medium: -25 ... 125 °C electronics / environment: -25 ... 85 °C storage: -40 ... 85 °C											
Electrical protection												
Short-circuit protection	permanent											
Reverse polarity protection	no damage, but also no function											
Electromagnetic compatibility	emission and immunity according to EN 61326											

Mechanical stability		
Vibration	10 g (25 ... 2000 Hz) according to DIN EN 60068-2-6	
Shock	500 g / 1 msec according to DIN EN 60068-2-27	
Materials		
Pressure port / housing	stainless steel 1.4571 (316 Ti) / stainless steel 1.4301 (304)	
Display housing	PA 6.6, polycarbonate	
Seal sensor	none (welded)	
Diaphragm	stainless steel 1.4542 (17-4PH)	
Media wetted parts	pressure port, seal pressure port, diaphragm	
Miscellaneous		
Weight	approx. 160 g	
Display	4-digit, red LED display, digit height 7 mm, digit width 4.85 mm (angle 10°); 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)	
Long term stability	≤ ± 0.3 % span / year at reference conditions	
Operational life	100 million load cycles	
CE-conformity	EMC Directive: 2014/30/EU Pressure Equipment Directive: 2014/68/EU (module A) <sup>2</sup>	
<sup>2</sup> This directive is only valid for devices with maximum permissible overpressure > 200 bar.		
Wiring diagrams		
3-wire-system (current)		
Pin configuration		
Electrical connections	M12x1 (5-pin) plastic	
supply +	1	
supply -	3	
signal + (only for 3-wire)	2	
contact 1	4	
contact 2	5	
shield	via pressure port	
Connections (dimensions in mm)		
	<b>Mechanical connections - optional</b> 	<b>Rotatability of display module</b> 

The manufacturer provides the EU declaration of conformity.

Calibration - All production undergoes output control, which is performed by comparison with standards. The traceability of standards and working gauges is ensured in accordance with Act No. 505/1990, as amended, on metrology.

The manufacturer offers the possibility to supply sensors calibrated in the calibration laboratory of BD SENSORS, accredited according to ČSN EN ISO / IEC 17025: 2018.

Ordering code DS 217

23.08.2024

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<b>Measured pressure</b>												
Gauge	7	8	P									
<b>Input [bar]</b>												
0 ... 6				6	0	0	1					
0 ... 10				1	0	0	2					
0 ... 16				1	6	0	2					
0 ... 25				2	5	0	2					
0 ... 40				4	0	0	2					
0 ... 60				6	0	0	2					
0 ... 100				1	0	0	3					
0 ... 160				1	6	0	3					
0 ... 250				2	5	0	3					
0 ... 400				4	0	0	3					
0 ... 600				6	0	0	3					
Customer				9	9	9	9					
Customer - underpressure				X	X	X	X					
<b>Analogue output</b>												
4 ... 20 mA / 2-wire								1				
Customer								9				
<b>Switching output</b>												
1 switching contact									1			
2 switching contacts									2			
<b>Accuracy</b>												
0,5%									5			
Customer									9			
<b>Electrical connection</b>												
Connector M 12 x 1 (5-pin)										N	0	1
Customer										9	9	9
<b>Mechanical connection</b>												
G 1/2" EN 837										2	0	0
G 1/4" DIN 3852										3	0	0
G 1/4" EN 837										4	0	0
1/4" NPT										N	4	0
7/16 - 20 UNF										U	0	0
Customer										9	9	9
<b>Seals</b>												
Without - welded											2	
Customer											9	
<b>Special version</b>												
Standard												0 0 0
Oxygen application												0 0 7
Customer												9 9 9

0,-...without additional charge      On request...in accordance with the producer

Surcharges for calibration are not subject to any discounts. Subject to change.  
 This document contains the specification for ordering the product;  
 detailed technical parameters of the product and its possible variants are given in the data sheet.  
 BD SENSORS reserves the right to change sensor specifications without further notice.

