



DPS+

Differential Pressure Transmitter

accuracy according to IEC 60770:
0.35 – 2.0 % FSO BFSL

Differential pressure

from 0 ... 6 mbar up to 0 ... 1000 mbar

Output signals

2-wire: 4 ... 20 mA

3-wire: 0 ... 20 mA / 4 ... 20 mA / 0 ... 10 V

4-wire: 0 ... 20 mA / 4 ... 20 mA / 0 ... 10 V

Special characteristics

- ▶ high overpressure capability
- ▶ compensated temperature output signal
- ▶ very short response

The differential pressure transmitter DPS+ was developed for measuring of dry, non aggressive gases and compressed air. It can be used for varied HVAC applications.

The basic element of the DPS+ is a temperature compensated piezoresistive pressure sensor which is able to operate a very long time without any maintenance.

Robust design allows deployment also in laboratories and industrial conditions. The pressure transmitter DPS+ features good long term stability, linearity and repeatability.

Preferred applications areas



HVAC



medical

Preferred areas of use areas



gas, compressed air



Input pressure range								
Nominal pressure P _N (overpressure, underpressure, p. difference)	[mbar]	6	10	20	40	60	100	160
Max. static pressure	[mbar]	100	100	200	350	350	1000	1000
Nominal pressure P _N (overpressure, underpressure, p. difference)	[mbar]	250	400	600	1000			
Max. static pressure	[mbar]	1000	1000	3000	3000			
Output signal / Supply								
Standard	2-wire: 4 ... 20 mA / V _S = 19 ... 31 V _{DC} (with display)							
Option	2-wire: 4 ... 20 mA / V _S = 12 ... 31 V _{DC} (without display)							
	3/4-wire: 0 (4) ... 20 mA / V _S = 19 ... 31 V _{DC} or 230 V _{AC} / 50/60 Hz (± 10 % tolerance) or 110 V _{AC} / 50/60 Hz (± 10 % tolerance) or 230 V _{AC} / 50/60 Hz (± 10 % tolerance) or 110 V _{AC} / 50/60 Hz (± 10 % tolerance) 0 ... 10 V / V _S = 19 ... 31 V _{DC}							
Performance								
Accuracy ¹	P _N > 160 mbar: ≤ ± 0,35 % FSO P _N = 40 ... 160 mbar: ≤ ± 1 % FSO P _N < 40 mbar: ≤ ± 2 % FSO							
Permissible load	current 2-wire: R _{max} = [(V _S - V _{Smin}) / 0,02] Ω voltage 3-wire: 500 Ω current 3-wire: 1 MΩ							
Influence effects	supply: ≤ ± 0,05 % FSO / 10 V load: ≤ ± 0,05 % FSO / kΩ							
¹ accuracy according to IEC 60770 (non-linearity, hysteresis, repeatability)								
Thermal effects (Offset and Span) / Permissible temperatures								
Nominal pressure P _N	[mbar]	≤ 10	≤ 20	≤ 250	≤ 250			
Thermal error (offset and span)		≤ ± 2	≤ ± 1,5	≤ ± 1	≤ ± 1			≤ ± 0,5
middle TK	[% FSO / 10 K]	± 0,3	± 0,25	± 0,15	± 0,15			± 0,08
in compensated range	[°C]	0 ... 60						
Permissible temperatures		medium: -40 ... 80 °C	electronics / environment: -25 ... 50 °C					storage: -40 ... 50 °C
Electrical protection								
Short-circuit protection	permanent							
Reverse polarity protection	no damage, but also no function							
Electromagnetic protection	emission and immunity according to EN 61326							
Materials								
Pressure port	brass nickel plated							
Housing	ABS							
Sensor	silicon, mineral glass, epoxy or RTV							
Media wetted parts	pressure port, sensor, seals							
Miscellaneous								
Display	2-wire: 4-digit, red LED display; digit height 7 mm							
Current consumption (without contacts)	signal output current: max. 25 mA signal output voltage: max. 14 mA							
Maximal dimensions	142 x 105 x 84 mm (l x w x h)							
Weight	approx. 500 g							
Installation position	any							
Ingress protection	IP 54							
Contacts ²	1 or 2 contacts with switching capacity 5A / 230 V _{AC} (configurable: switching point 5 ... 95 % FSO, hysteresis 1 ... 5 % FSO)							
² possible with 3-wire or 4-wire version with display								
Pin configuration								
Electrical connections			Terminal marking					
2-wire with display (V _S = 19 ... 31 V _{DC})	supply +		1					
	supply -		2					
	ground pin		3					
2-wire without display (V _S = 12 ... 31 V _{DC})	supply +		1					
	supply -		2					
	ground pin		3					
3-wire (V _S = 19 ... 31 V _{DC})	supply+		2					
	supply -		4					
	signal +		3					
4-wire (230 V _{AC} / 110 V _{AC})	supply: L		1					
	supply: N		2					
	signal +		3					
	signal -		4					

Mechanical connections (dimension in mm)

Standard: $\varnothing 6,6 \times 11$ (for flex. tubes $\varnothing 6$)

standard:
2-wire electronic

3-wire/4-wire electronic

Electrical connection

Standard: screw clamps. 1,5 mm², if supply DC – screw clamp Pg7, if supply AC clamp Pg9

standard:
2-wire electronic

3-wire/4-wire electronic

Switch contact

This data sheet contains product specification. properties are not guaranteed. Subject to change without notice.

Ordering code DPS+

3.4.2020

DPS+

Pressure																				
Differential	8	0	8																	
Gauge	8	0	9																	
Input [mbar]																				
0 ... 6 mbar					0	0	6	0												
0 ... 10 mbar					0	1	0	0												
0 ... 20 mbar					0	2	0	0												
0 ... 0 mbar					0	4	0	0												
0 ... 60 mbar					0	6	0	0												
0 ... 100 mbar					1	0	0	0												
0 ... 160 mbar					1	6	0	0												
0 ... 250 mbar					2	5	0	0												
0 ... 400 mbar					4	0	0	0												
0 ... 600 mbar					6	0	0	0												
0 ... 1000 mbar					1	0	0	1												
Customer					9	9	9	9												
Customer underpressure					X	X	X	X												
Output signal																				
4...20 mA / 2-wire									1											
0 ... 20 mA / 3-wire									2											
0 ... 10 V / 3-wire									3											
4 ... 20 mA / 3-wire									7											
4 ... 20 mA / 4-wire (for supply 230 VAC, 110 VAC)									A											
Customer									9											
Accuracy																				
0,35 % (P _N > 160 mbar)									3											
1 % (P _N = 40 ... 160 mbar)									8											
2 % (P _N < 40 mbar)									G											
0,35 % including Calibration Certificate (P _N > 160 mbar)									S											
1 % including Calibration Certificate (P _N = 40 ... 160 mbar)									U											
2 % including Calibration Certificate (P _N < 40 mbar)									L											
Customer									9											
Supply																				
12...31 VDC (only 2-wire, without display)									1											
19...31 VDC (only 2-wire / 3-wire)									2											
230 V / 50 Hz (only 3-wire / 4-wire)									5											
110 V / 50 Hz (only 3-wire / 4-wire)									4											
Display																				
Without display														0						
Display with LCD 4-digits														D						
Customer														9						
Switching contacts																				
Without switching contact																		0		
With 1 switching contact (only for 3-wire with display)																		1		
With 2 switching contacts (only for 3-wire with display)																		2		
Customer																		9		



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The company BD SENSORS s.r.o. is certified by TÜV SÜD Czech according to the standard ISO 9001.



Specials versions			
Standard	0	0	0
Clamp ring tube fitting 1/8" Ms, nickel-plated Ø 6 mm	Z	3	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.



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