



DPS 300

Multi Range Differential Pressure Transmitter for Gas and Compressed Air

Silicon Sensor

accuracy according to EN IEC 62828-2:
0.5 % span BFLS

Differential pressure

from 0 ... 1.6 mbar up to 0 ... 1000 mbar

Output signals

3-wire: 0 ... 10 V, 0 ... 20 mA
(0 ... 5 V, 4 ... 20 mA switchable)
2-wire: 4 ... 20 mA (optional)

Special characteristics

- ▶ adjustable ranges
- ▶ high overpressure capability
- ▶ adjustable damping
- ▶ compact form
- ▶ LC-display, two-line

Optional versions



- ▶ automatic zero adjustment
- ▶ contacts
(only in combination with display)
- ▶ square root extraction
(only in combination with display)

The pressure transmitter DPS 300 was developed for the differential pressure measuring for dry, non-aggressive gases and compressed air and can be used for several HVAC applications


The DPS 300 is a multi-range transmitter with up to three adjustable ranges.

The device is equipped with a two-line LC display optionally and can be simply parameterized. Values, status of the contact and the unit are shown on the display.

Preferred applications are

-  HVAC
-  medical

Preferred areas of use are

-  gas, compressed air



Input pressure range						
Nominal pressure P_N [mbar] (differential, gauge pressure)	1,6	4	10	40	250	1000
Adjustable to P_N [mbar]	1,0	2,5	6	25	60 / 160	400 / 600
Nominal pressure P_N symmetric (differential pressure) [mbar]	± 1.6	± 4	± 10	± 40	± 250	± 1000
Max. static pressure [mbar]	200	200	200	345	1000	3000

Output signal / Supply			
Standard	3-wire:	switchable on:	0 ... 10 V / 0 ... 20 mA 0 ... 5 V / 4 ... 20 mA with automatic zero adjustment: $V_S = 19 \dots 32 V_{DC}$ $V_S = 24 \dots 32 V_{DC}$
Option	2-wire:		4 ... 20 mA with automatic zero adjustment: $V_S = 11 \dots 32 V_{DC}$ $V_S = 24 \dots 32 V_{DC}$

Performance	
Accuracy	for $P_N < 6$ mbar: $\leq \pm 0,5$ % span BFSL for $P_N \geq 6$ mbar $\leq \pm 1$ % span BFSL
Permissible load	voltage 3-wire: $R_{min} = 10 \text{ k}\Omega$ current 3-wire: 330Ω current 2-wire: $R_{max} = [(V_S - V_{Smin}) / 0,02 \text{ A}] \Omega$
Influence effects	supply: 0.05 % span / 10 V load: 0.05 % span / $\text{k}\Omega$
Response time T_{90}	< 100 ms; adjustable by potentiometer in the range of 0 msec up to 5000 msec
Turn on time	500 ms
Long term stability	$\leq \pm 0.5\%$ span / year at reference conditions, for $P_N < 6$ mbar $\leq \pm 0.2\%$ span / year at reference conditions, for $P_N \geq 6$ mbar
Measuring rate	12,5 Hz

Contact (optional)		
	3-wire version	2-wire version (optional)
Number, form	2 x relay-output (NO/NC)	2 x PNP-open-collector-contact
switching current	max. 2 A	max. 125 mA resistant; short-circuit-proof
switching voltage	max. 220 V_{DC} ; max. 250 V_{AC}	
switching capacity	max. 60 W	
Accuracy of switching points	$\leq \pm 2$ % span	$\leq \pm 2$ % span
Accuracy of repeatability	$\leq \pm 0.5$ % span	$\leq \pm 0.5$ % span
Switching frequency	5 Hz	5 Hz
Switching cycles	$< 100 \times 10^6$	$< 100 \times 10^6$

Thermal effects / Permissible temperatures	
Thermal error (offset and span)	for $P_N < 6$ mbar: $\leq \pm 0,5$ % span / 10 K (typ.) for $P_N \geq 6$ mbar : $\leq \pm 0,3$ % span / 10 K (typ.)
in compensated range	0 ... 50 °C
Permissible temperatures	medium: 0 ... 50°C electronics / environment: 0 ... 50°C storage: -10 ... 70°C

Electrical protection	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic protection	EMC directive: 2014/30/EU emission and immunity according to EN 61326

Materials	
Pressure port	brass nickel plated
Housing	ABS
Sensor	Ceramic, silicon, epoxy, RTV
Media wetted parts	pressure port, PVC / silicone tube, sensor

Display (optional)	
Performance	two-line LC-Display, visible range 32.5 x 22.5 mm; 5-digit 7-segment-main display, digit size 8 mm, range of indication: ± 9999 ; 8-digit 14-segment-additional display, digit size 5 mm; 52-segment-bargraph; accuracy: 0,1% ± 1 digit
Functions	<ul style="list-style-type: none"> - parameterisation of contacts - selection of units - selection of signal (linear, square root extraction) - cut-off-function (only with square root extraction) - min- / max-value - re calibration - auto zeroing - factory setting

DPS 300

Differential Pressure Transmitter

Technical Data

Miscellaneous																			
Current consumption	2-wire: max. 22 mA (during automatic zero adjustment: +23 mA) 3-wire: max. 30 mA																		
Weight	Approx. 200 g																		
Ingress protection	IP 54																		
Installation position	vertical ¹																		
¹ The devices are calibrated in a vertical position with the pressure port down. If this position is changed on installation there can be slight deviations in the zero point.																			
Mechanical connections (dimensions in mm)																			
Standard	Ø 6,6 x 11 (for flex. tubes Ø 6)																		
Option	Ø 4,4 x 10 (for flex. tubes Ø 4)																		
Electrical connections (conductor cross-section)																			
without ferrule	1.5 mm ²																		
with ferrule	1 mm ²																		
Pin configuration																			
Standard	cable gland M16x1,5																		
Electrical connections	<table border="1"> <thead> <tr> <th></th> <th>3-wire</th> <th>2-wire</th> </tr> </thead> <tbody> <tr> <td>supply +</td> <td>VS +</td> <td>VS +</td> </tr> <tr> <td>supply -</td> <td>VS -</td> <td>VS -</td> </tr> <tr> <td>signal + (only for 3-wire)</td> <td>Iout / Vout</td> <td>-</td> </tr> <tr> <td>contact 1</td> <td>C1 / NO1 / NC1</td> <td>S1</td> </tr> <tr> <td>contact 2</td> <td>C2 / NO2 / NC2</td> <td>S2</td> </tr> </tbody> </table>		3-wire	2-wire	supply +	VS +	VS +	supply -	VS -	VS -	signal + (only for 3-wire)	Iout / Vout	-	contact 1	C1 / NO1 / NC1	S1	contact 2	C2 / NO2 / NC2	S2
	3-wire	2-wire																	
supply +	VS +	VS +																	
supply -	VS -	VS -																	
signal + (only for 3-wire)	Iout / Vout	-																	
contact 1	C1 / NO1 / NC1	S1																	
contact 2	C2 / NO2 / NC2	S2																	
Wiring diagram																			
<p>3-wire-system (current / voltage)</p>	<p>3-wire-system (current / voltage) with 2 contacts</p>																		
<p>2-wire-system (current)</p>	<p>2-wire-system (current) with 2 contacts</p>																		
Dimension (in mm)																			
<p>without display</p> <p style="text-align: center;">cable gland M16x1,5</p> <p style="text-align: center;">DPS 300 without display</p>	<p>with display</p> <p style="text-align: center;">cable gland M16x1,5</p> <p style="text-align: center;">DPS 300 with display</p>																		

Ordering code DPS 300

23.8.2022

DPS 300

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Pressure											
Differential pressure	8	1	5								
Gauge pressure	8	1	6								
Input [mbar]											
0 ... 1,6				0	0	1	6				
0 ... 4				0	0	4	0				
0 ... 10				0	1	0	0				
0 ... 40				0	4	0	0				
0 ... 250				2	5	0	0				
0 ... 1000				1	0	0	1				
-1.6 ... 1,6				S	1	K	6				
-4 ... 4				S	0	0	4				
-10 ... 10				S	0	1	0				
-40 ... 40				S	0	4	0				
-250 ... 250				S	2	5	0				
-1000 ... 1000				S	1	0	2				
Customer				9	9	9	9				
Customer - underpressure				X	X	X	X				
Output											
3-wire: 0 ... 5 V / 0 ... 10 V / 0 ... 20 mA (switchable)								3Z			
2-wire: 4 ... 20 mA								1			
Customer								2			
Switching Outputs											
Without								0			
2 switching contacts (only in combination with display)								B			
Accuracy											
1% ($P_N \geq 6$ mbar)								8			
2% ($P_N < 6$ mbar)								G			
Display											
Without display								0			
LC display								C			
Customer								9			
Front foil											
BD SENSORS								1			
Neutral								N			
Customer								9			
Mechanical connection											
Ø 6,6 x 11 (for flex. tubes Ø 6)								Y	0	0	
Ø 4,5 x 10 (for flex. tubes Ø 4)								Y	0	2	
Customer								9	9	9	
Pressure port											
Brass nickel plated								M			
Customer								9			
Special version											
Standart									0	0	0
Automatic zeroing									6	0	0
Square-root extraction (only in combination with display)									6	0	5
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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