BD SENSORS®
pressure measurement

DPS 300

Multi Range Differential Pressure Transmitter for Gas and Compressed Air

Silicon Sensor

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

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

BD SENSORS s.r.o.
Hradišťská 817
CZ – 687 08 Buchlovice
Tel.: +420 572 411 011
www.bdsensors.cz
info@bdsensors.cz

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:	0 ... 10 V / 0 ... 20 mA	V_S = 19 ... 32 V_{DC}
	switchable on:	0 … 5 V / 4 … 20 mA	
		with automatic zero adjustment:	V_S = 24 ... 32 V_{DC}
Option	2-wire:	4 ... 20 mA	V_S = 11 ... 32 V_{DC}
		with automatic zero adjustment:	V_S = 24 ... 32 V_{DC}

Performance				
Accuracy	for P_N < 6 mbar: ≤ ± 0,5 % span BFSL		for P_N ≥ 6 mbar ≤ ± 1 % span BFSL	
Permissible load	voltage 3-wire:	R_{min} = 10 kΩ	current 3-wire:	330 Ω
	current 2-wire:	R_{max} = [(V_S – $V_{S\,min}$) / 0,02 A] Ω		
Influence effects	supply:	0.05 % span / 10 V	load:	0.05 % span / kΩ
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	≤ ± 0.5% span / year at reference conditions, for P_N < 6 mbar ≤ ± 0.2% span / year at reference conditions, for P_N ≥ 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 switching voltage switching capacity	max. 2 A max. 220 V_{DC}; max. 250 V_{AC} max. 60 W	max. 125 mA resistant; short-circuit-proof
Accuracy of switching points	≤ ± 2 % span	≤ ± 2 % span
Accuracy of repeatability	≤ ± 0.5 % span	≤ ± 0.5 % span
Switching frequency	5 Hz	5 Hz
Switching cycles	< 100 x 10^6	< 100 x 10^6

Thermal effects / Permissible temperatures			
Thermal error (offset and span)	for P_N < 6 mbar: ≤ ± 0,5 % span / 10 K (typ.)	for P_N ≥ 6 mbar : ≤ ± 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

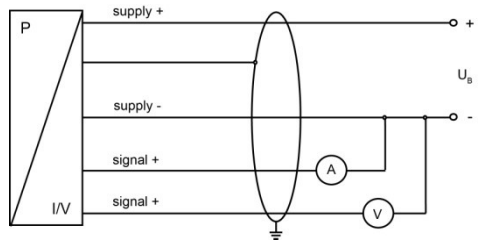
Materials	
Pressure port	brass nickel plated
Housing	ABS
Sensor	Ceramic, silicon, epoxy, RTV
Media wetted parts	pressure port, PVC / silicone tube, sensor

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	- 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

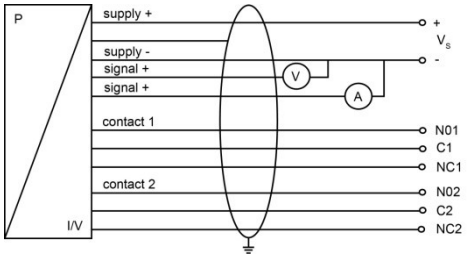
Miscellaneous		
Current consumption	2-wire: max. 22 mA (during automatic zero adjustment: +23 mA)	3-wire: max. 30 mA
Weight	Approx. 200 g	
Ingress protection	IP 54	
Installation position	vertical [1]	
[1]The devices are calibrated in a vertical position with the pressure port down. If this position is 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 mm²	
with ferrule	1 mm²	
Pin configuration		
Standard	cable gland M16x1,5	
Electrical connections	3-wire	2-wire
supply + supply – signal + (only for 3-wire) contact 1 contact 2	VS + VS - Iout / Vout C1 / NO1 / NC1 C2 / NO2 / NC2	VS + VS - - S1 S2

Wiring diagram

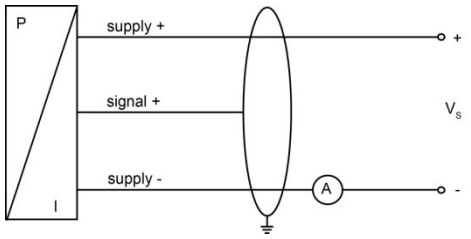
3-wire-system (current / voltage)



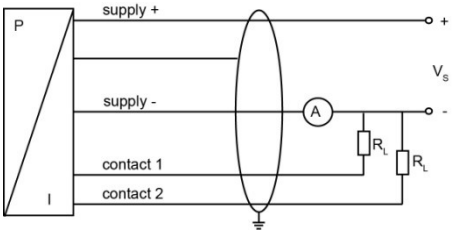
3-wire-system (current / voltage) with 2 contacts



2-wire-system (current

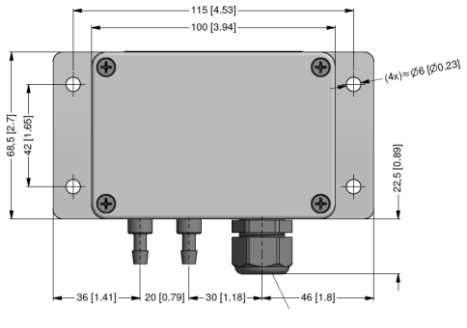


2-wire-system (current) with 2 contacts



Dimension (in mm)

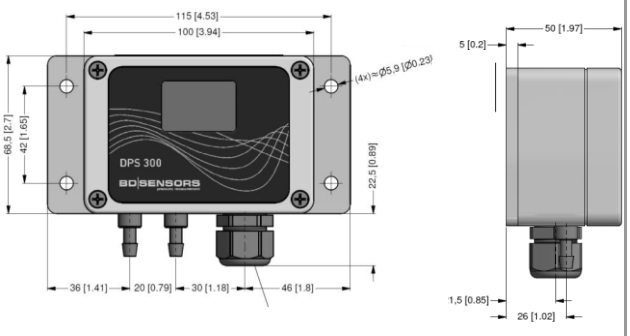
without display



cable gland
M16x1,5

DPS 300 without display

with display



cable gland
M16x1,5

DPS 300 with display

Tel.: +420 572 411 011
www.bdsensors.cz
info@bdsensors.cz

BD SENSORS®
tlakoměrná technika

ORD. Code DPS 300

05.06.2024

DPS 300 | | | | - | | | | | - | | - | | - | | - | | - | | | | - | | - | | | |

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-vodič: 0 … 5 V / 0 … 10 V / 0… 20 mA / 4 … 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	
Squere-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.

BD SENSORS s.r.o.
Hradišťská 817
CZ – 687 08 Buchlovice
Tel.: +420 572 411 011
Fax: +420 572 411 497
www.bdsensors.cz
info@bdsensors.cz