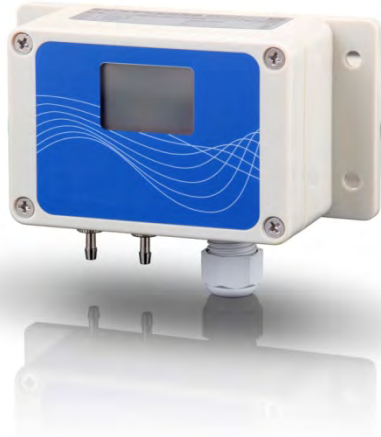


# IDPS 300



## Multi Range Differential Pressure Transmitter for Gas and Compressed Air

Silicone Sensor

accuracy according to IEC 60770:  
0.5% FSO 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

### Optional versions

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



The pressure transmitter IDPS 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 IDPS 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 parameterized simply.

Values, status of the contact and the unit are shown on the display.

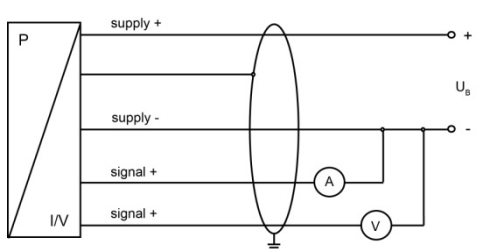
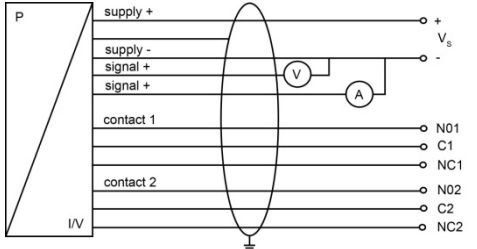
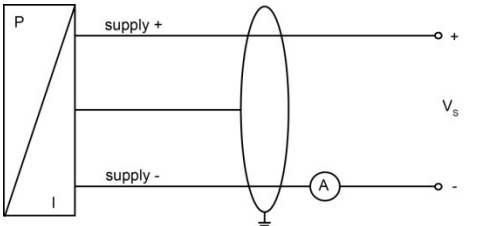
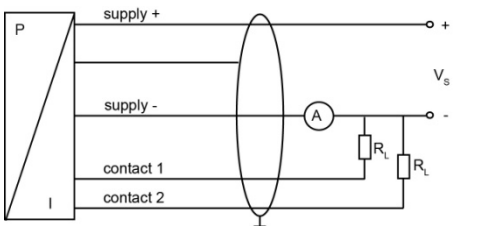
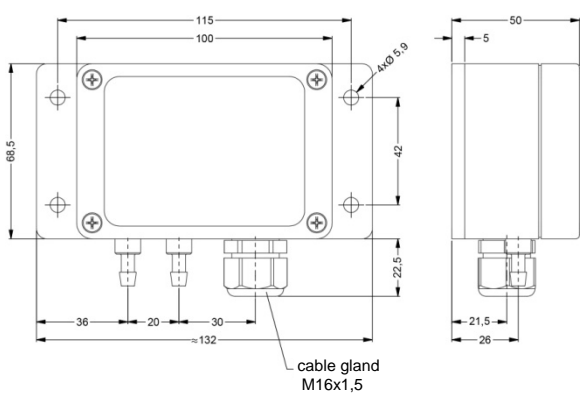
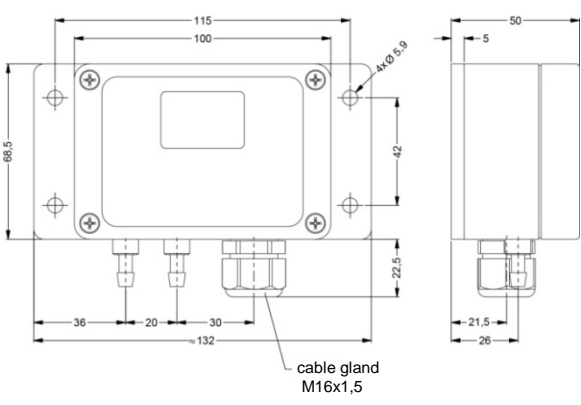
### Preferred applications are

-  HVAC
-  medical

### Preferred areas of use are

-  gas, compressed air

| Input pressure range  |   |  |                                       |   |                                 |  |  |
|---|---|--|---------------------------------------|---|---------------------------------|--|--|
| Nominal pressure P <sub>N</sub> [mbar]<br>(differential, gauge pressure)    | 1,6   | 4  | 10                                    | 40  | 250                             | 1000                                       |  |
| Adjustable to P <sub>N</sub> [mbar]   | 1,0   | 2,5  | 6                                     | 25  | 60 / 160                        | 400 / 600                                  |  |
| Nominal pressure P <sub>N</sub> symmetric<br>(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        | V <sub>S</sub> = 19 ... 32 V <sub>DC</sub> |  |
|   |   |  |                                       |   | 0 ... 5 V / 4 ... 20 mA         | V <sub>S</sub> = 24 ... 32 V <sub>DC</sub> |  |
|   |   |  |                                       |   | with automatic zero adjustment: | V <sub>S</sub> = 24 ... 32 V <sub>DC</sub> |  |
| Option  | 2-wire:   |  |                                       |   | 4 ... 20 mA                     | V <sub>S</sub> = 11 ... 32 V <sub>DC</sub> |  |
|   |   |  |                                       |   | with automatic zero adjustment: | V <sub>S</sub> = 24 ... 32 V <sub>DC</sub> |  |
| Performance   |   |  |                                       |   |                                 |  |  |
| Accuracy  | for P <sub>N</sub> ≥ 6 mbar: ≤ ± 0,5% FSO BFSL  |  |                                       | for P <sub>N</sub> < 6 mbar: ≤ ± 1% FSO BFSL            |                                 |  |  |
| Permissible load  | voltage 3-wire:   | R <sub>min</sub> = 10 kΩ   |                                       | current 3-wire:   |                                 | 330 Ω                                      |  |
|   | current 2-wire:   | R <sub>max</sub> = [(V <sub>S</sub> - V <sub>S min</sub> ) / 0,02 A] Ω |                                       |   |                                 |  |  |
| Influence effects   | supply:   | 0.05 % FSO / 10 V  |                                       |   | load: 0.05 % FSO / kΩ           |  |  |
| Response time T <sub>90</sub>   | < 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% FSO / year at reference conditions, for P <sub>N</sub> < 6 mbar<br>≤ ± 0,2% FSO / year at reference conditions, for P <sub>N</sub> ≥ 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 <sub>DC</sub> ; max. 250 V <sub>AC</sub>   |  |                                       |   |                                 |  |  |
| switching capacity  | max. 60 W   |  |                                       |   |                                 |  |  |
| Accuracy of switching points  | ≤ ± 2 % FSO   |  |                                       | ≤ ± 2 % FSO   |                                 |  |  |
| Accuracy of repeatability   | ≤ ± 0,5 % FSO   |  |                                       | ≤ ± 0,5 % FSO   |                                 |  |  |
| Switching frequency   | 5 Hz  |  |                                       | 5 Hz  |                                 |  |  |
| Switching cycles  | < 100 x 10 <sup>6</sup>   |  |                                       | < 100 x 10 <sup>6</sup>                                 |                                 |  |  |
| Thermal effects / Permissible temperatures                                  |   |  |                                       |   |                                 |  |  |
| Thermal error (offset and span)   | ≤ ± 0.5 % FSO / 10 K (typ.) for P <sub>N</sub> < 6 mbar   |  |                                       | ≤ ± 0.3 % FSO / 10 K (typ.) for P <sub>N</sub> ≥ 6 mbar |                                 |  |  |
| 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<br>emission and immunity according to EN 61326  |  |                                       |   |                                 |  |  |
| Materials   |   |  |                                       |   |                                 |  |  |
| Pressure port   | brass nickel plated   |  |                                       |   |                                 |  |  |
| Housing   | ABS   |  |                                       |   |                                 |  |  |
| Sensor  | Ceramic, silicone, epoxy, RTV   |  |                                       |   |                                 |  |  |
| Media wetted parts  | pressure port, PVC / silicon 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"> <li>- parameterisation of contacts</li> <li>- selection of units</li> <li>- selection of signal (linear, square root extraction)</li> <li>- cut-off-function (only with square root extraction)</li> <li>- min- / max-value</li> <li>- re calibration</li> <li>- autozeroing</li> <li>- factory setting</li> </ul> |  |                                       |   |                                 |  |  |

| Miscellaneous   |  |   |
|---|--|---|
| Current consumption   | 2-wire: max. 22 mA<br>(during automatic zero adjustment: +23 mA) | 3-wire: max. 30 mA  |
| Weight  | Approx. 200 g  |   |
| Ingress protection  | IP 54  |   |
| Installation position   | vertical <sup>1</sup>  |   |
| <sup>1</sup> The devices are calibrated in a vertical position with 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 <sup>2</sup>  |   |
| with ferrule  | 1 mm <sup>2</sup>  |   |
| Pin configuration   |  |   |
| Standard  | cable gland M16x1,5  |   |
| Electrical connections  | 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  |  |   |
| <b>3-wire-system (current / voltage)</b><br>  |  | <b>3-wire-system (current / voltage) with 2 contacts</b><br> |
| <b>2-wire-system (current)</b><br>   |  | <b>2-wire-system (current) with 2 contacts</b><br>          |
| Dimension (in mm)   |  |   |
| <b>standard</b><br> <p>IDPS 300 without display</p>  |  | <b>option</b><br> <p>IDPS 300 with display</p>              |

### Ordering code IDPS 300

IDPS 300

|  |           |      |   |         |
|--|-----------|------|---|---------|
| <b>Pressure</b>                              |           |      |   |         |
| differential pressure                        | 8         | 1    | 5 |         |
| gauge pressure                               | 8         | 1    | 6 | consult |
| <b>Input</b>                                 |           |      |   |         |
| [mbar]                                       |           |      |   |         |
| 1.6  | 0         | 0    | 1 | 6       |
| 4.0  | 0         | 0    | 4 | 0       |
| 10   | 0         | 1    | 0 | 0       |
| 40   | 0         | 4    | 0 | 0       |
| 250  | 2         | 5    | 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       |
| <b>Output</b>                                |           |      |   |         |
| 3-wire: 0 ... 10 V, 0 ... 20 mA <sup>1</sup> |           |      |   | 3Z      |
| 2-wire: 4 ... 20 mA                          |           |      |   | 1       |
| customer                                     |           |      |   | 9       |
| <b>contact</b>                               |           |      |   |         |
| without                                      |           |      |   | 0       |
| 2 contacts <sup>2</sup>                      |           |      |   | B       |
| <b>Accuracy</b>                              |           |      |   |         |
| $P_N \geq 6$ mbar                            | 0,5 % FSO | BFSL |   | 8       |
| $P_N < 6$ mbar                               | 1,0 % FSO | BFSL |   | G       |
| <b>Display</b>                               |           |      |   |         |
| without display                              |           |      |   | 0       |
| LC display                                   |           |      |   | C       |
| customer                                     |           |      |   | 9       |
| <b>Front foil</b>                            |           |      |   |         |
| BD SENSORS                                   |           |      |   | 1       |
| neutral                                      |           |      |   | N       |
| customer                                     |           |      |   | 9       |
| <b>Mechanical connection</b>                 |           |      |   |         |
| Ø6.6 x 11 (for flex. tubes Ø6)               |           |      | Y | 0 0     |
| Ø4.4 x 10 (for flex. tubes Ø4)               |           |      | Y | 0 2     |
|  |           |      | 9 | 9 9     |
| <b>Pressure port</b>                         |           |      |   |         |
| brass nickel plated                          |           |      |   | M       |
| customer                                     |           |      |   | 9       |
| <b>Special version</b>                       |           |      |   |         |
| standard                                     |           |      | 0 | 0 0     |
| automatic zeroing                            |           |      | 6 | 0 0     |
| square-root extraction <sup>2</sup>          |           |      | 6 | 0 5     |
| customer                                     |           |      | 9 | 9 9     |

output switchable on 0 ... 5 V / 4 ... 20 mA  
only in combination with display