

Data Sheet: Pressure Sensor Type DPS Pressure Sensor Type APS



The pressure measuring transducer of the DPS series is suitable for the recording of overpressure, negative pressure and differential pressure of non-aggressive gases. The robust construction fulfils the requirements both for laboratory and industrial applications. Important criteria such as long term stability, linearity and good repeatability is guaranteed due to the solid mechanical construction. The temperature drift of each sensor is reduced to a minimum through specific compensation. The wear-free inductive measuring system offers virtually maintenance-free operation. The integrated electronics supplies a pressure proportional voltage output signal from 0-10 V (option: current signal 0(4)-20 mA). This guarantees an interference-free transmission even over long distances. For large pressure variations an attenuation can be supplied.



Application Areas:

Heating, ventilation, air conditioning; cleanroom technology; medical technology; filter technology; level measuring (bubble-through measurements) flow-velocity measurements (Pitot tube; orifice blade)

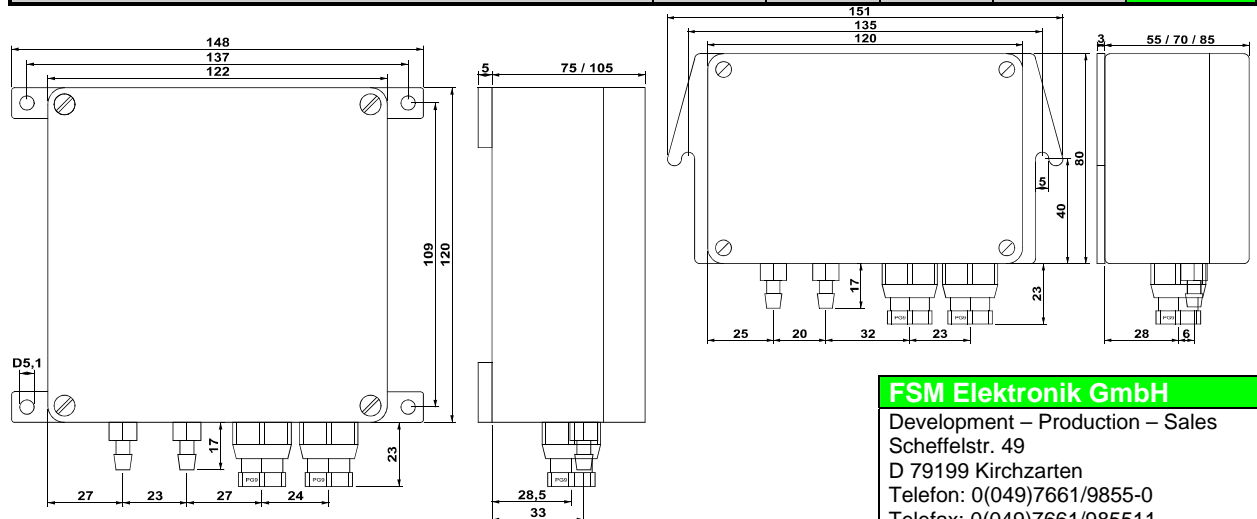
Technical Data:

| | |
|---|---|
| Measurement range: | 0, 1/0, 2/0, 3/0, 4/0, 5/0, 6/1/1, 6/2, 5/4/5/6/10/16/20 /25/50/100/160/200/250/400/500/600/1000 hPa Overpressure, negative pressure, differential pressure, other measurement ranges on request, additional charge for measurements < 2.5 hPa, (see price list) |
| Option: | Absolute pressure (TYP APS) 900 to 1100 hPa, 800 to 1200 hPa, 0 to 1000 hPa other measurement ranges on request |
| Measurement principle: | Inductive |
| Overloading capability: | Measurement range up to 400 hPa,: factor 5 Measurement range greater than 400 hPa,: factor 2 For delta p measurements max. system pressure 1 bar Larger overloading capability on request |
| Medium: | Non-aggressive gases |
| Substances in contact with measured gas: | Ni, Al, CuBe, PU |
| Linearity: | ± 1 % FS |
| Option: | ± 0.5 % of FS only for DPS- sensors for measurement range ≥ 1 hPa for APS- sensors for measurement range ΔP ≤ 200 hPa ± 0.2 % for FS only for DPS- sensors for measurement range ≥ 2,5 hPa for APS- sensors for measurement range ΔP ≤ 100 hPa Option linearity values is not valid for the square root value indication version. |
| Hysteresis: | Max. ± 0,1 % FS |
| Power supply: | 19 to 31 VDC |
| Protection: | 250 mA |
| Supply influence: | < 0,05 % |
| Option: | 230 VAC, 115 VAC, 24 VAC, (±10 %, 50-60 Hz) |
| Option: | For "contaminated networks" interference suppression and filter elements are provided |
| Output signal: | 0 to 10 V (max. load resistor ≥ 2 kOhm) |
| Current consumption: | ca. 10 mA without loading |
| Option output signal: | ± 5 V, ± 10 V (max. load resistor ≥ 2 kOhm) 0- 20 mA, 4- 20 mA (max. load resistor ≤ 500 Ohm) 4- 20 mA two-wire version $U_B = 12 \text{ to } 32 \text{ V}$; maximum load resistor (OHM) = $U_B \text{ (V)} \cdot 12 / I_{\text{max}} \text{ (A)}$ |
| response time: | T_{90} ca. 0,02 sec. |

| | |
|--------------------------------|--|
| Temperature drift: | Zero point $\pm 0,3\%$ / 10 K max. FS Range $\pm 0,3\%$ / 10 K max. FS |
| Temperature region: | Specified range + 10°C to + 50°C |
| Humidity: | 80% relative humidity |
| Option: | Increased temperature range -10°C to + 60°C |
| Storage temperature: | -10°C to + 70°C |
| Long term stability: | $\pm 0,5\%$ per year typ. |
| Housing: | Material ABS, dimensions: see below |
| Pressure connections: | $\varnothing 6,6 \times 11\text{mm}$ (for flexible tubing $\varnothing 6$) |
| Electrical connections: | Cable glands M12 x 1,5, screw terminals max. 1,5 mm ² |
| Protection class: | II |
| Degree of protection: | IP 54 |
| Standardisation: | EN 50081-1; EN 50081-2; EN 50082-1; EN 50082-2; EN 61010 |
| Weight: | ca. 0,3 kg (ca. 0,4 kg with power supply) |
| Shock resistance: | 10 g |
| Sensor volume: | ca. 3 ml |
| Volume increase: | ca. 0,2 ml at the rated pressure |
| Option: | LC-display 3½-digits |
| Option: | Automatic zeroing (current consumption ca. 50 mA) |
| Option: | 1 or 2 limit contacts (current consumption ca. 35/45 mA) Relay output change over contacts: 6 A / 230 VAC |
| Option: | Sensor with square root output signal 0 to 10 V or 0 (4) to 20 mA Square root extraction: $UR = \sqrt{(10 \times UL)}$ (UL= linear output 0-10 V) $IR = \sqrt{(20 \times IL)}$ (IL = linear output 0-20 mA) |
| Option: | Overload protection up to 2 bar |

Housing Specifications:

| Equipment selections | Housing (L x W x H) in mm | | | | |
|--|-----------------------------|-----------|-----------|------------|-------------|
| | 120x80x55 | 120x80x70 | 120x80x85 | 122x120x75 | 122x120x105 |
| Pressure sensor $\geq 0,5$ hPa standard | X | | | | |
| Pressure sensor $\geq 0,5$ hPa with limit contacts | | | X | | |
| Pressure sensor $\geq 0,5$ hPa with LC- display | | X | | | |
| Pressure sensor $\geq 0,5$ hPa with limit contacts and LC-display | | | X | | |
| Pressure sensor $\geq 0,5$ hPa with automatic zeroing | | | | X | |
| Pressure sensor $\geq 0,5$ hPa with automatic zeroing and LC-display | | | | X | |
| Pressure sensor $\geq 0,5$ hPa with automatic zeroing, limit contacts and LC-display | | | | | X |
| Pressure sensor $< 0,5$ hPa standard with automatic zeroing | | | | X | |
| Pressure sensor $< 0,5$ hPa with LC- Display | | | | X | |
| Pressure sensor $< 0,5$ hPa with limit contacts | | | | X | |
| Pressure sensor $< 0,5$ hPa with limit contacts and LC- Display | | | | | X |



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