

Data sheet

Pressure transducer DPS



The DPS pressure transmitter can be used for measurement of differential, positive and negative pressure variations of non-aggressive gasses. The application utilizes the proven and reliable inductive measurement system. It provides precise measurement of extremely low pressures and offers an excellent long term stability. The sensor provides a pressure-proportional analog output signal. It assures an interference-free transmission over long distances. For strongly fluctuating pressures a damping is available. Its solid mechanics and temperature compensation of each sensor make the DPS the perfect choice when reliable measurement under harsh conditions is needed. A wide variety of optional features allow the DPS to be customized for the most diverse application profiles.

Applications

- > Control of critical environments
- > Medical technology
- > Heating, ventilation and air conditioning (HVAC)
- > Filter technology
- > Flow rate measurement

Technical Data

General	
Measurement principle	Inductive Measurement System
Measured medium	Non-aggressive gasses
Medium-affected substances	Ni, Al, CuBe, PU
Measurement data	
Measurement range	Selectable measurement ranges for over-, negative-, And differential pressure: 0,1 / 0,2 / 0,3 / 0,4 / 0,5 / 0,6 / 1,0 / 1,6 / 2,5 / 4,0 / 5,0 / 6,0 / 10 / 16 / 20 / 25 / 50 / 100 / 160 / 200 / 250 / 400 / 500 / 600 / 1000 hPa Further measurement ranges on request.
Overall accuracy	Standard 1 % FS* Options 0,5% of full scale for pressure ranges \geq 1 hPa 0,2% of full scale for pressure ranges \geq 2,5 hPa
Long-term stability	\leq 0,5 % FS/year
Measurement data	
Temperature drift	\leq 0,03 % v. EW pro K FS/K
Overload limits	Measurement ranges < 400hPa: Fivefold overload capability Measurement ranges > 400hPa: Twofold overload capability Higher overload capability on request.
Sensor capacity	ca. 3 ml

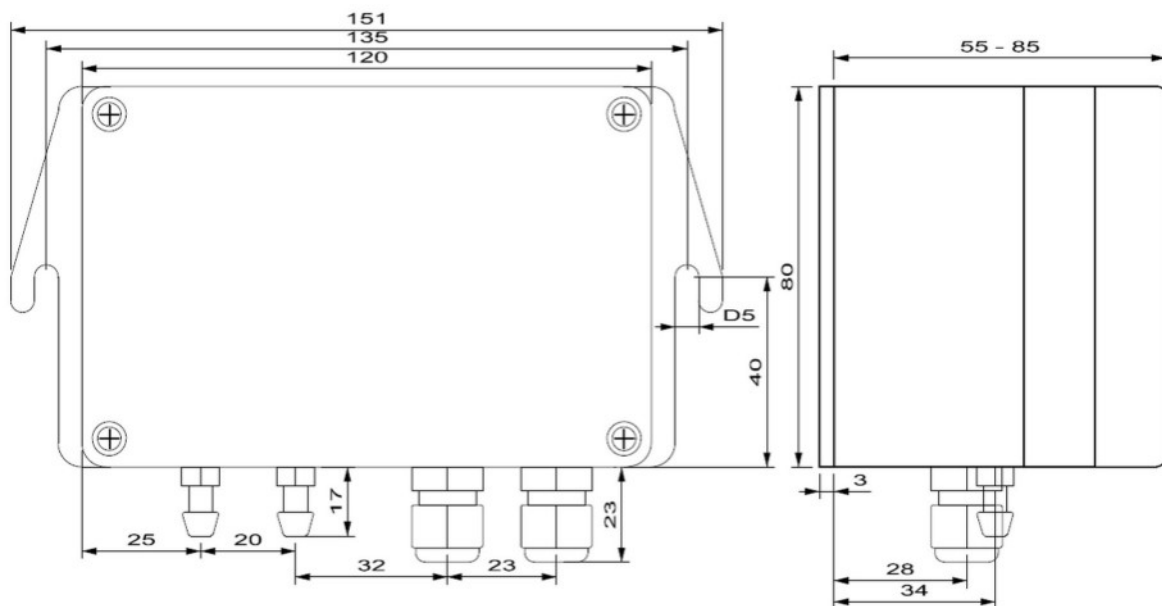
* The accuracy describes the maximum permissible measurement deviation of the sensor output signal from an applied pressure value. The accuracy includes measurement errors due to linearity errors, hysteresis errors and repeatability error. Pressure transducers from FSM are being subjected to a zero point calibration and an amplitude adjustment. Both errors are thereby compensated. The specified accuracy therefore includes the maximum error at room temperature.

Electrical data	
Power supply	<p>Standard 19 - 35 VDC Supply influence <0,05 %</p> <p>Options 230 VAC ($\pm 10 \%$, 50 - 60 Hz) 115 VAC ($\pm 10 \%$, 50 - 60 Hz) 24 VAC ($\pm 10 \%$, 50 - 60 Hz) Supply influence < 0,05 %</p> <p>Option Option Interference filter for disturbances in power grids</p>
Output signal	Selectable between 0 - 20 mA (Load resistor $\leq 500 \Omega$) 4 - 20 mA (Load resistor $\leq 500 \Omega$) +/- 10 V (Load resistor $\geq 2 \text{ k}\Omega$) +/- 5 V (Load resistor $\geq 2 \text{ k}\Omega$)
Power consumption	typ. 10 mA (without electrical load)
Protection class	II
Reverse polarity protection	Yes
Time constant	120 ms
Ambient conditions	
Operating conditions	<p>Standard Temperature 10 °C - 50 °C Humidity < 80 % RH non-condensing)</p> <p>Option Erweiterter Temperaturbereich: -10°C bis 60°C</p>
Storage conditions	Temperature -10 °C - 70 °C Humidity < 80 % RH (non-condensing)
Housing	
Housing material	ABS
Dimensions	see dimension drawing
Cable glands	M 12 x 1,5 mm
Weight	max. 400 g
Display	Option: LC Display, 3.5-digits
Protection type	IP54
Pressure connections	$\varnothing 6,6 \times 11 \text{ mm}$ (for flexible tubes $\varnothing 6 \text{ mm}$)

Further options	
Limit contact	1 or 2 limit contacts (current consumption approx. 35/45 mA) relay output changer: 6 A/ 230 VAC
SqRt output signal	Sensor with square root output signal 0 - 10 V or 0 (4) - 20 mA: $UR = \sqrt{10 \times UL}$ $IR = \sqrt{20 \times IL}$ UL= linear output 0 - 10 V IL = linear output 0- 20 mA
Overload protection	High overload protection up to 2 bar
Auto zero adjustment	Automatic zero adjustment at regular intervals

Scale drawing

Standard housing 120 x 80 x 55 mm



Drawings of other Housing are available on request

Housing options Pressure sensor	Housing (L x W x H) in mm				
	120 x 80 x 55	120 x 80 x 70	120 x 80 x 85	122 x 120 x 75	122 x 120 x 105
≥ 0,5 hPa Standard	x				
≥ 0,5 hPa with limit contacts			x		
≥ 0,5 hPa with LC display		x			
≥ 0,5 hPa with limit contacts, LC display			x		
≥ 0,5 hPa with automatic zero setting				x	
≥ 0,5 hPa with autom. zero setting, LC display				x	
≥ 0,5 hPa with automatic zero setting, limit contacts and LC display					x
< 0,5 hPa Standard with autom. zero setting				x	
< 0,5 hPa with LC display					x
< 0,5 hPa with limit contacts				x	
< 0,5 hPa with limit contacts, LC display					x

Extract from the EC Declaration of Conformity

We hereby declare under our sole responsibility that the DPS product complies with the requirements of the following Directives and harmonised standards and is therefore in line with the provisions:

2014/35/EU	Low-voltage Directive
2014/30/EU	EMC Directive
2011/65/EU	RoHS Directive
EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
EN 61000-3-2:2014	Electromagnetic compatibility (EMC) - Part 3-2: Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
EN 61000-3-3:2013	Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection
EN 50581:2012	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

The device is labeled by the CE mark.