Electronic Differential Pressure Switch S1510

Adjustment ranges
from 0…0.4 up to 0…6 bar

Description

The electronic differential pressure switch S1510 is suitable for measurements of positive or negative gauge pressure or differential pressure.

Typical applications are for example monitoring of compressors, filters or vacuum systems. Other fields of use are measurements of supply and return fuel lines in heating systems as well as flow, control-pressure and level measurement.

The integrated electronic circuit converts the measured values into switching signals and shows them at the display. This electronic differential pressure switch additionally provides an analog output signal. The optional ouput signal (0…10 V or 0/4…20 mA) can be damped, spread, inverted or linearly transformed by a table function.

Features

- O High repeatability
- O Robust design, high over pressure safety
- O Long mechanical service life
- O Easy switch point adjustment with pressurizing
- O RoHS conform

Measuring ranges

- O Differential pressure 0 … 6 bar
- O Max. system pressure 16 bar

Applications

- O Filter control and monitoring
- O Flow and level measurement
- O Plant and machine construction

Adjustment ranges

Adjustment range (bar)	Max. system pressure (bar)	Overload pressure (bar)	Burst pressure (bar)
0 … 0.4	0 … 16	16	25
0 … 0.6			
0 … 1.0			
0 … 1.6			
0 … 2.5			
0 … 4.0			
0 … 6.0			

Model: S1510

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Technical data

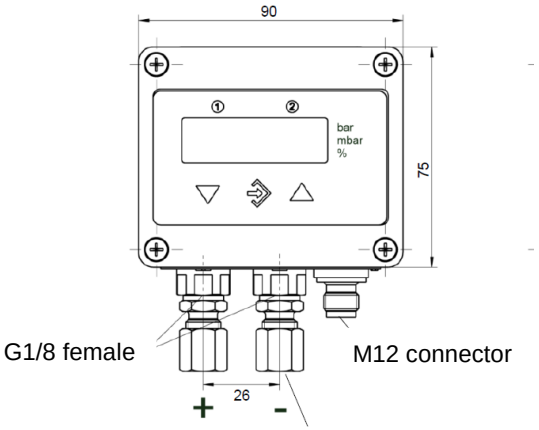
Model	**S1510**	
Version	Diaphragm	
Media	Compressed air, neutral fluids, self-lubricating fluids	
Execution	Differential pressure	
Connections		
Electrical connections	2 x round connectors M12 for power supply and analog signal (5 pin, male) and for switch contacts (4 pin, male)	
Process connections		
Standard	G1/8 female	
Optional	Compression fittings for 6 or 8 mm pipes (brass)	
Material		
Measuring element		
Standard	NBR	
Optional	Viton®	
Process connection	Brass	
Housing	Polyamid	
Display		
Resolution	3½ digit LED	
Units	Status LED: bar, mbar, % Status LED: ❶❷	
Switching contacts		
Number	2 relays contacts or MOSFET switch outputs (isolated)	
Switching function	NO or NC (programmable)	
Output signal (optional)	**0 … 20 mA or 4 … 20 mA, 3 wire**	**0 … 10 V, 3 wire**
Max. load	$U_S \leq 26$ V: $R_L \leq (U_b - 4\ V)/0.02$ A $U_S > 26$ V: $R_L \leq 1100\ \Omega$	$U_S \geq 15$ V: $R_L \geq 2\ k\Omega$ $U_S = 12..15$ V: $R_L \geq 10\ k\Omega$
Adjustable parameters		
Scaling	Adjustable within the measuring range, min. 25% of F.S.	
Damping	0 … 100 s (step response time 10% / 90%)	
Zero stabilization	0 … 1/3 of F.S. (e.g. low flow cut-off)	
Zero pressure calibration	0 … 1/3 of F.S. (for compensation of different mounting orientations)	
Output characteristic	Linear, square rooted, horizontal cylindr. tank, table with 3 …30 entries	
Accuracy	**typ.**	**max.**
Linearization error[1]	0.8 % of F.S.	2.5 % of F.S.
TC span	0.2 % of F.S. / 10 K	0.4 % of F.S. / 10K[2]
TC zero point	0.2 % of F.S. / 10 K	0.5 % of F.S. / 10K[3]
Power rating		
Relays contact	max. 2 A @ 30 V DC / 32 V AC (max. 60 W)	
Semiconductor switch	max. 0.25 A @ 32 V DC/AC (max. 8 W)	
Temperature ranges		
Storage	-20... + 70°C	
Medium	-10... + 70°C	
Ambient	-10... + 70°C	
Protection class	IP65	
Mounting		
Standard	Rear mounting holes for panel mounting	
Optional	Wall mounting set	
Power supply		
Nominal supply voltage	24 V DC/AC	
Operating supply voltage U_S	12 … 32 V DC/AC	
Power consumption	approx. 2 W	
Weight	approx. 0.9 kg	

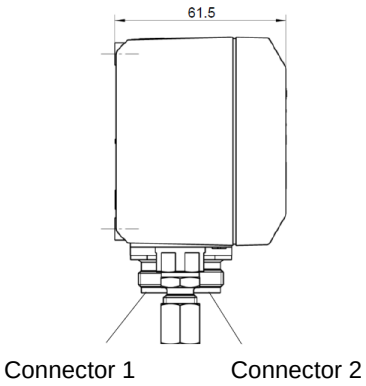
[1] Non-linearity and hysteresis @ 25°C

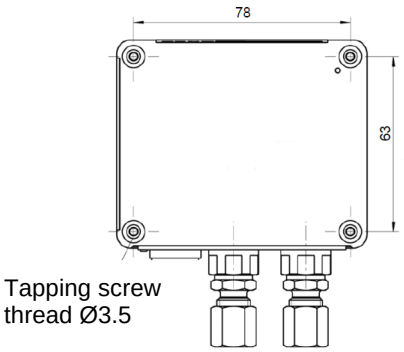
[2] For adjustment range 0 … 400 mbar: 0.8 % of F.S. / 10 K

[3] For adjustment range 0 … 400 mbar: 0.8 % of F.S. / 10 K

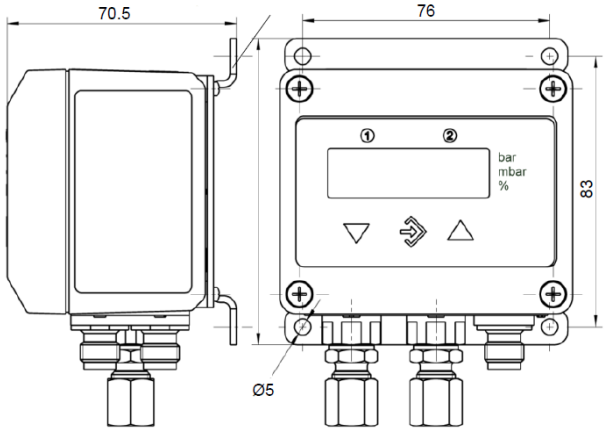
Dimensions (in mm)





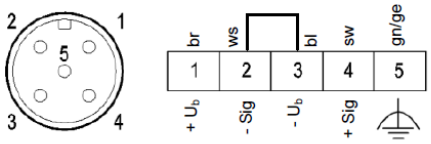


Wall mounting

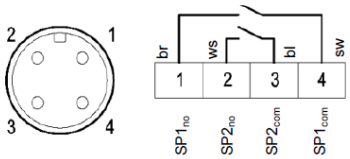


Electrical connections

Connector 1: Power supply and output signal



Connector 2: Switching contacts (shown: NO)



Subject of technical changes