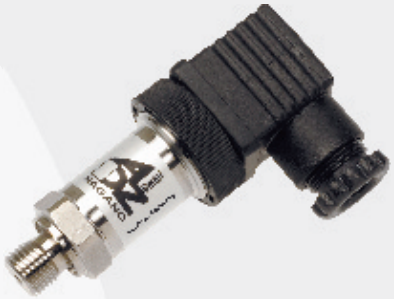
Electronic Pressure Switch

D S 4

Main features



- **Measuring ranges 0...0.6 bar to 0...2000 bar**
- Output signals **npn or pnp** (max. 1.7 A DC)
- Media temperature range -40°C to 125°C
- No internal transmitting media (fully welded, "dry" measuring cell)
- Shock and vibration resistant > 1000 g shock, > 20 g vibration
- Compact and robust stainless steel design
- **Safe against polarity inversion and excess load**
- Degree of protection IP67

Applications

- General industrial applications
- Hydraulics
- Air Conditioning
- Plant engineering and automation technology
- Automotive engineering
- Refrigeration and Pneumatics
- Mechanical engineering
- Environmental technology

Description

Thanks to its stainless steel diaphragm and semiconductor thin-film technology, the electronic pressure switch has excellent properties guarantying a high degree of stability and compatibility with media as well as vacuum-tightness. For its robust design, it is highly reliable also in very rugged conditions. Desired parameters and functions can be configured by means of a PC programming adapter and easy-to-handle software.

Allocation of 2 or 4 switch points to one exit

This enables the configuration of either one usual pressure switch with hysteresis function or to determine a pressure range to be monitored. The switch points are freely adjustable at a resolution of 0.5% of the final value.

Allocation of additional signal delay

This feature permits adjusting a delay for the output in order to avoid frequent toggling of the output in the event of instable values, for example. Adjustment is possible within the range between 10 ms and 600 s.

Optional NO or NC switch

This option defines the contacting behaviour of the switch. The electrical output itself consists of an excess-load and short-circuit-proof semiconductor output that is optionally available as an npn or pnp version.

The precision and reproducibility of the switch is at 0.5 % of the final value across the entire temperature range.

DPF sensors
www.dpfsensors.com

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Specifications

Pressure range									
Measuring range*	p [bar]	**0,6**	**1,0**	**1,6**	**2,0**	**2,5**	**4,0**	**6,0**	**10,0**
Overload pressure	p [bar]	6	6	6	6	6	10	20	20
Burst pressure	p [bar]	9	9	9	9	9	15	30	30
Measuring range*	p [bar]	**16**	**20**	**25**	**40**	**60**	**100**	**160**	**200**
Overload pressure	p [bar]	40	40	100	100	200	200	400	400
Burst pressure	p [bar]	60	60	150	150	300	300	600	600
Measuring range*	p [bar]	**250**	**400**	**600**	**1000**	**1600**	**2000**		
Overload pressure	p [bar]	750	750	840	1200	2400	2400		
Burst pressure	p [bar]	1000	1000	1050	1500	3000	3000		

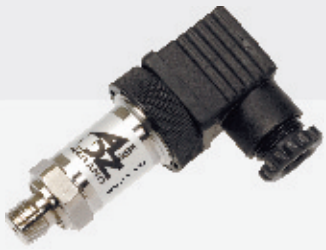
Electrical parameter				
Switch point		**individually adjustable via external control keys or factory setting**		
Number		1 (npn or pnp)		
Function		NO / NC, windows- and hysteresis function freely adjustable		
Switching voltage	U [V_{DC}]	10-30		
Switching current	I [A]	1,7		
Supply voltage	U [V_{DC}]	10-30		
Time lag	t [s]	0-600		
Withstand voltage	U [V_{DC}]	350	option 710	

Accuracy			
Accuracy @RT	% of the range	≤ 1,5**	** incl. nonlinearity, hysteresis, repeatability, zero-offset- and final-offset
	BFSL	≤ 0,125	(acc. to IEC 61298-2)
Non-linearity	% of the range	≤ 0,15	
Repeatability	% of the range	≤ 0,10	
Stability/year	% of the range	≤ 0,10	

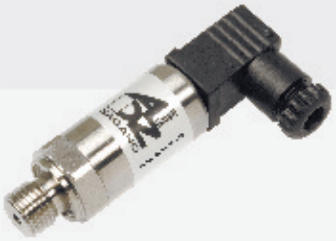
Acceptable temperature ranges			
Measuring medium	T [°C]	-40...125	
Ambience	T [°C]	-20...85	
Storage	T [°C]	-40...125	
Compensated range*	T [°C]	-20...85	
Temperature coefficient within the compensated range			
Mean TC offset	% of the range	≤ 0,15 / 10K	
Mean TC range	% of the range	≤ 0,15 / 10K	
Total error	% of the range	-40°C 2,00%	
	% of the range	105°C 2,00%	

Mechanical parameter			
Parts in contact with the measuring medium*		stainless steel	
Housing*		stainless steel	
Shock resistance	g	1000	acc. to IEC 68-2-32
Vibration resistance	g	20	acc. to IEC 68-2-6 and IEC 68-2-36
Mass	m [g]	~ 100	(depending on design)
CE - conformity		EC Directive 89/336/EWG	
IP system of protection	The IP system of protection as specified in the data sheets generally applies, with their mating plug connected.		
	Relative pressure transmitters usually require a ventilated mating plug and/or cable to aloow for pressure		
*** others upon request**	compensation. From a pressure range of 60bar, a ventilated mating plug and/or cable is not necessarily required.		

Configurations -examples-



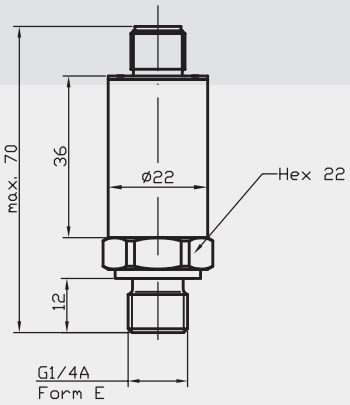
MVS/A



MVS/C

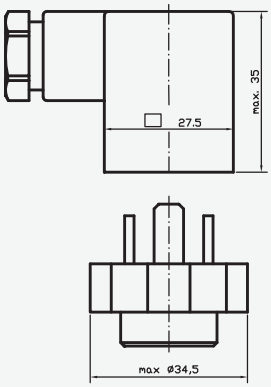
M12x1
(S 763)

DS4 with M12x1



Connectors*

MVS/A
DIN EN 175301-803



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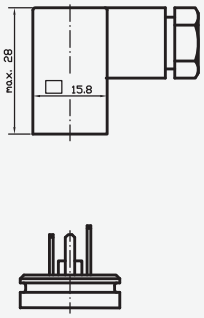
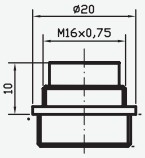


male socket
M16x0,5 (S 723)



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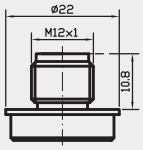
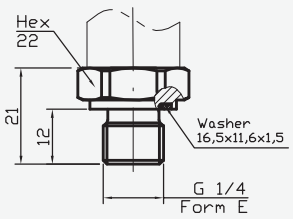
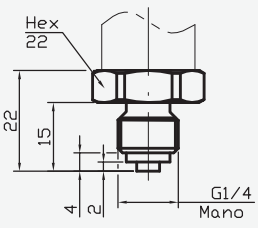


Pressure Connections*

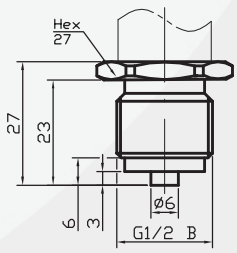
G ¼ A; DIN 3852; Form E



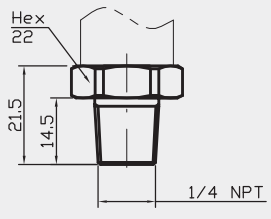
G ¼ B



G ½ B



¼ NPT



*** custom-made adjustments acc. to pressure connections and connecting options are possible**

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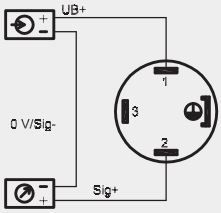
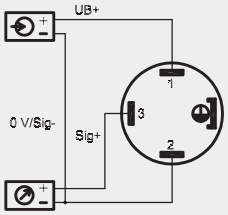
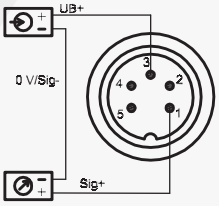
Electrical Connections* (left: 2-wire, right: 3-wire)

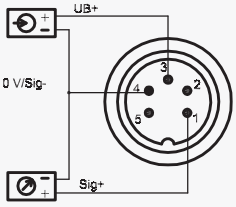
MVS/A
DIN EN
175301-803



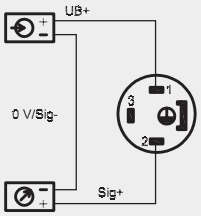


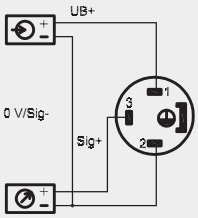
male
socket
M16x0,5
(S 723)





MVS/C
DIN EN
175301-803





male
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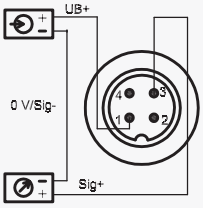
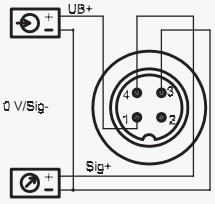
M12x1
(S 763)





Legend

power supply
consumer

(1) red
(2) black
(3) white

*** custom-made adjustments acc. to pressure connections and connecting options are possible**

Product line

DS4	Electronic Pressure Switch	SMC	Pressure Transmitter with CANopen Interface
DPSX9I	Intrinsically Safe Electronic Pressure Switch for Current	SME	Pressure Transmitter in Miniature Design
DPSX9U	Intrinsically Safe Electronic Pressure Switch for Voltage	SMF	Pressure Transmitter with Flush Diaphragm
PS1	Level Sensor	SMH	High Pressure Transmitter
PSX2	Intrinsically Safe Level Sensor	SML	Pressure Transmitter for Industrial Application
SHP	High Precision Pressure Transmitter	SMO	Pressure Transmitter in Mobile Hydraulics
SIS	Low Pressure Transmitter in Short and Compact Design	SMS	OEM Pressure Transmitter for Hydraulics and Pneumatics
SIL	Low Pressure Transmitter for Industrial Application	SMX	Intrinsically Safe Pressure Transmitter for Industrial Application
SKE	High Temperature Pressure Transmitter with Detached Electronics	TPS	Multi-Function Transmitter for Pressure and Temperature
SKL	High Temperature Pressure Transmitter with Cooling Fins		

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