

# Pressure Transmitter in Miniature Design

AE-SME SERIE

## Main features

- Measuring ranges 0...1 to 0...20 bar (housing  $\varnothing$  ~ 14 mm)
- Measuring ranges 0...25 to 0...400 bar (housing  $\varnothing$  ~ 12 mm)
- Output signal 0.5...4.5 V ratiometric, 0...5 V non-ratiometric
- Media temperature range -40°C to 125°C
- No internal transmitting media (fully welded, "dry" measuring cell)
- Round plug, ribbon cable
- Degree of protection IP67
- Highly reliable
- Miniature design - length ~ 50 mm / housing  $\varnothing$  ~ 14 mm / weight ~ 20 g

## Applications

- General industrial applications
- Hydraulics
- Pneumatics
- Mechanical engineering
- Automotive industry
- Plant engineering and automation technology

## Description

Its miniature design permits application in confined space and, thanks to its stainless steel diaphragm and semiconductor thin-film technology, has excellent properties regarding excess pressure, hysteresis and repeat accuracy.

The stainless steel diaphragm is fully vacuum-tight, extremely burst-resistant and applicable with all standard media in automotive engineering, hydraulics, pneumatics, etc., as long as they are compatible with stainless steel. Its robust design guarantees a high level of reliability and safety, also in rugged conditions.



## Specifications

### Pressure range

#### Measuring range\*,

housing Ø ~ 14 mm	p [bar]	1,0	1,6	2,0	2,5	4,0	6,0	10,0	16,0	20,0
Overload pressure	p [bar]	6	6	6	6	10	20	20	40	40
Burst pressure	p [bar]	9	9	9	9	15	30	30	60	60

#### Measuring range\*,

housing Ø ~ 12 mm	p [bar]	25	40	60	100	160	200	250	400
Overload pressure	p [bar]	100	100	200	200	400	400	750	750
Burst pressure	p [bar]	150	150	300	300	600	600	1000	1000

### Electrical parameter

Electrical parameter	signal	$U_s$ [V <sub>dc</sub> ]	$R_L$ [kΩ]
Output signal *	$R_A$ in Ohm	0...5 V <sub>dc</sub> 0,5...4,5 V <sub>dc</sub> ratiometric	8...32 5 ±10% > 4,7
Response time * (10-90%)	t [ms]	< 1	
Withstand voltage	U [V <sub>dc</sub> ]	350	

### Accuracy

Accuracy @RT	% of the range ≤ 0,50**	option ≤ 0,25	** incl. nonlinearity, hysteresis, repeatability, zero-offset- and final-offset (acc. to IEC 61298-2)
	BFSL	≤ 0,125	
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]	-40...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	5 acc. to IEC 68-2-6 and IEC 68-2-36
Mass	m [g]	~ 20 (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 allow for pressure compensation. From a pressure range of 60bar, a ventilated mating plug and/or cable is not necessarily required.	

\* other upon request

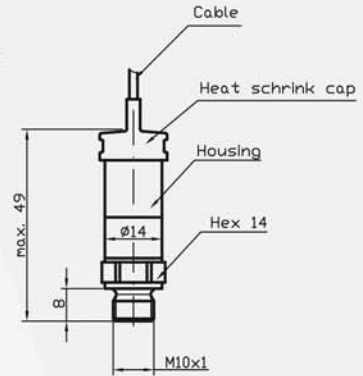
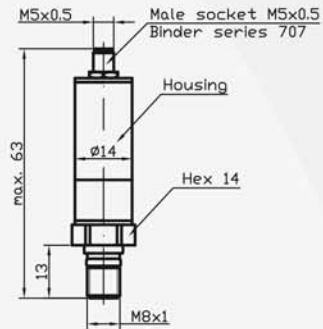
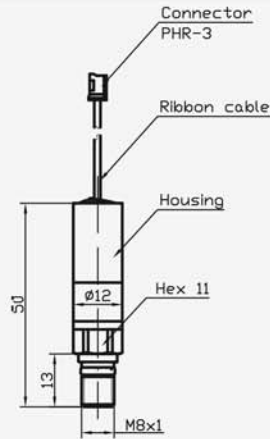
**Configurations -examples- SME with**



ribbon cable  
with connector

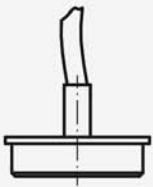
M5x0,5- S707

cable output

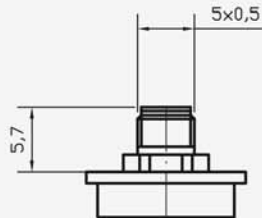


**Connectors\***

cable output  
steel

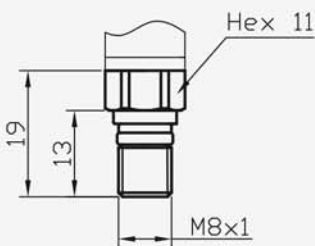


male socket  
M5x0,5 (S707)

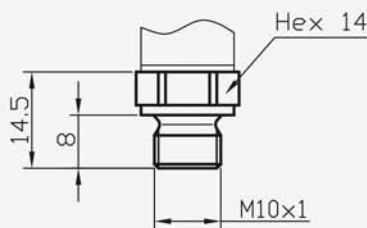


**Pressure Connections\***

M 8x1



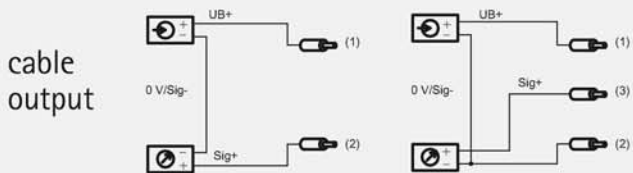
M 10x1



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

# AE - SML SERIE Pressure Transmitter in Miniature Design

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



### 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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