

# The Lightweight

# S M E

## Pressure Transmitter in Miniature Design

### Main features

- Measuring ranges 0...1 to 0...20 bar (housing  $\varnothing$  ~ 14 mm)
- Measuring ranges 0...25 to 0...600 bar (housing  $\varnothing$  ~ 12 mm)
- Output signal 0.5...4.5 V rat., 0...5 V non-ratiometric, 0...10 V
- Media temperature range -40°C to 125°C
- Optional in combination with temperature probe (max pressure 20 bar)
- 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

- Automotive applications
- Race sport
- Embedded systems
- Ultra mobile systems
- Carry-on equipment
- Hydraulics, Pneumatics
- Mechanical engineering

### Description

The SME pressure transducer is a space saving light weight. Despite the compressed dimensions and miniaturized design the SME is robust and all stainless steel. At the same time it is full of Know-How and can be customized to individual requirements such as pressure range or output signal. The SME is not a product "off the rack".

Popular applications can be found in motor sport and drones.



### 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	600
Overload pressure	p [bar]	100	100	200	200	400	400	750	750	750
Burst pressure	p [bar]	150	150	300	300	600	600	1000	1000	1000

(other pressure range as -1...0 bar, -1...9/24 bar etc. or absolute pressure are available)

#### ELECTRICAL PARAMETER

		3-wire	3-wire	5-wire
Output signal*		0...5 V <sub>DC</sub>	0,5...4,5 V ratiometric	0,5...4,5 V ratiometric
output signal temperature*				PT1000
Supply voltage	U <sub>S</sub> [V <sub>DC</sub> ]	8...32	5 ± 10 %	5 ± 10 %
Load resistor	R <sub>L</sub> in Ohm	≥4.7kΩ	≥4.7kΩ	≥4.7kΩ
Response time	t [ms]	≤ 1	≤ 1	≤ 1
Maximum supply current	I [mA]	10	7,5	7,5
Isolation voltage*	U [V <sub>DC</sub> ]	30		

#### ACCURACY

Accuracy @ RT	% of the range	≤ 0,50***	*** incl. nonlinearity, hysteresis, repeatability, zero-offset- and final-offset (acc. to IEC 61298-2)
Non-linearity	BFSL	≤ 0,125	
Stability/year	% of the range	≤ 0,10	

#### ACCEPTABLE TEMPERATURE RANGES

Media	T [°C]	-40...125
Ambience	T [°C]	-40...85
Storage	T [°C]	-40...125
Compensated range*	T [°C]	-20...85
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 (17-4PH)	
Housing		stainless steel (17-4PH)	
Weight	m [g]	~ 20	depending on design
Shock resistance/drop	g	1000	acc. to DIN EN 60068-2-32 – free fall
Vibration resistance	g	20	acc. to DIN EN 60068-2-6 – vibration (sinusoidal)
Shock resistance/constant	g	50	acc. to DIN EN 60068-2-27 – shock resistance

Note: Not every specification listed here applies to all configurations.

IP system of protection (IEC 605029) up to IP69K	IP rating applies with appropriate mating connector only.
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Configurations -examples-



M8x1  
M5

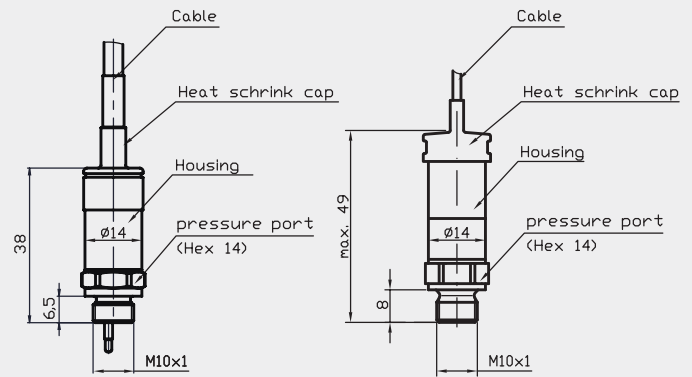
M10x1  
cable

M10  
cable

SME with

housing 14 mm,  
M10x1  
temperature probe

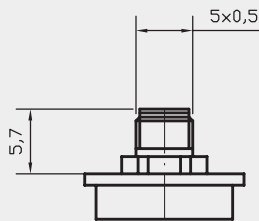
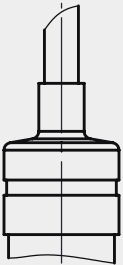
housing 14 mm,  
cable outlet



Electrical connections\* -examples-

cable output  
heat shrink  
(IP67)

male socket  
M5x0,5 (S707)  
(IP67)

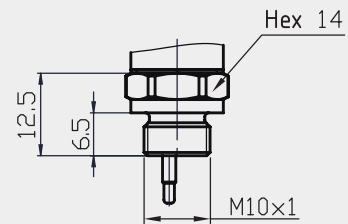
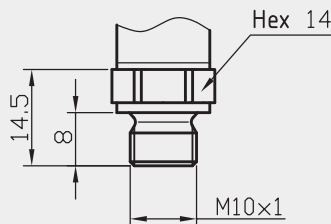
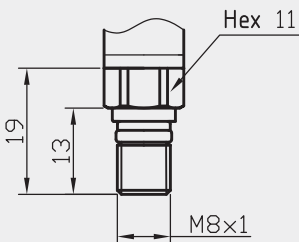


Pressure Connections\* -examples-

M 8x1

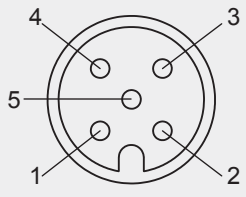
M 10x1

M 10x1 with temperature probe



\* customer specific configurations available

### Electrical Configuration\*

Plug M5x0,5 (S 707)	Cable 3-wire	Cable 5-wire	
			
3-wire  1: UB+ 2: Vout 3: nc 4: GND	3-wire  red: UB+ black: UB- white: out	5-wire  red: V+ black: V-/GND white: Vout green: PT1000 blue: PT1000	nc = not connected

The electrical connection must be made in accordance with the respective connection diagram unless otherwise agreed upon.

\* custom-made adjustments are possible

### Product line

DS5	Electronic Pressure Switch	SMC	Pressure Transmitter with CANopen Interface and J1939
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
PS1/17	Level Sensor	SMH	High Pressure Transmitter
PSX2	Intrinsically Safe Level Sensor	SML	Pressure Transmitter for Industrial Application
SH2	Pressure transmitter for hydrogen applications	SMO	Pressure Transmitter in Mobile Hydraulics
SHP	High Precision Pressure Transmitter	SMX2	Intrinsically Safe Pressure Transmitter for Industrial Application
SIS	Low Pressure Transmitter in Short and Compact Design	TPSE	Multi-Function Transmitter for Pressure and Temperature – external sensor
SIL	Low Pressure Transmitter for Industrial Application	TPSI	Multi-Function Transmitter for Pressure and Temperature – internal sensor
SKE	High Temperature Pressure Transmitter with Detached Electronics	TS1	Temperature transmitter for industrial application
SKL	High Temperature Pressure Transmitter with Cooling Fins		

