

# High Temperature Pressure Transmitter with Detached Electronics

# SKE

## Main Features

- Measuring ranges 1 bar to 5000 bar
- All standard signals for industry, hydraulics and pneumatics
- Media temperature range  $-40^{\circ}\text{C}$  to  $200^{\circ}\text{C}$ \* (\*others on request)
- Ambient temperature range  $-40^{\circ}\text{C}$  to  $105^{\circ}\text{C}$
- Shock and vibration-resistant  $> 1000\text{ g}$  shock,  $> 20\text{ g}$  vibration
- No internal transmitting media (fully welded, "dry" measuring cell)
- Degree of protection from IP65 (special version up to IP69K)
- Compact and robust stainless steel design
- Highly reliable
- Accuracy class 1 %, option up to 0.5%

## Applications

- Hydraulics
- Pneumatics
- Chemical industry
- Test stand design
- Plant engineering and automation

## Description

The SKE is a high-temperature pressure transducer with remote electronics. This makes the sensor fit for use in temperatures of up to  $200^{\circ}\text{C}$ . The electronics are remotely connected to the pressure cell by Teflon cable, allowing it to be placed in lower-temperature environments. This pressure transducer features excellent properties thanks to its stainless-steel membrane and semi-conductor thin-film technology. It may also come as a titanium version.

The stainless-steel membrane is entirely vacuum-tight, extremely burst-proof and can be used with all standard media, as far as they are compatible with stainless steel. Furthermore, its modular design offers a multitude of signaling, threading and connecting options. And on top of that, special customized calibration in a desired measuring range is available on request.



### Specification

#### PRESSURE RANGE

Measuring range*	p [bar]	1,0	1,6	2,0	2,5	4,0	6,0	10,0	16,0
Overload pressure	p [bar]	6	6	6	6	10	20	20	40
Burst pressure	p [bar]	9	9	9	9	15	30	30	60
Measuring range*	p [bar]	20	25	40	60	100	160	200	250
Overload pressure	p [bar]	40	100	100	200	200	400	400	750
Burst pressure	p [bar]	60	150	150	300	300	600	600	1000
Measuring range*	p [bar]	400	600	1000	1600	2000	2500	4000	5000
Overload pressure	p [bar]	750	840	1200	2400	2400	3600	4800	6000
Burst pressure	p [bar]	1000	1050	1500	3000	3000	4500	6000	7000

#### ELECTRICAL PARAMETER

		2-wire	3-wire	3-wire	3-wire	3-wire
Output signal*		4...20 mA	0...20 mA	0...10 V	0...5 V	0,5...4,5 V ratiometric
Supply voltage	$U_{DC}$ [V]	10...32**	9...30	12...32	8...32	$5 \pm 10\%$
Load resistor	$R_L$ in Ohm	$R_L = (U_S - 10V) / 0,02A$	max. 200Ω**	$\geq 4.7k\Omega$	$\geq 4.7k\Omega$	$\geq 4.7k\Omega$
Response time	t [ms]	$\leq 2$	$\leq 1$	$\leq 1$	$\leq 1$	$\leq 1$
Maximum supply current	I [mA]	23	40	10	10	7,5
				** > AppNote (see www.adz.de)		
Isolation voltage*	U [V <sub>DC</sub> ]	50				

#### ACCURACY

Accuracy @ RT	% of the range	$\leq 1,00^{***}$	Option $\leq 0,5$	*** incl. nonlinearity, hysteresis, repeatability, zero-offset- and final-offset (acc. to IEC 61298-2)		
Non-linearity	BFSL	$\leq 0,15$				
Stability/year	% of the range	$\leq 0,15$				

#### ACCEPTABLE TEMPERATURE RANGES \*\*\*\*

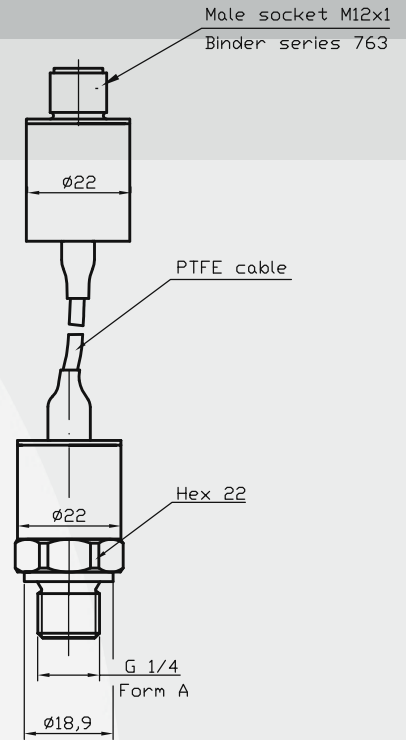
Measuring medium	T [°C]	-40...180	Option -200 ... +200°C	**** customized configurations possible		
Ambience	T [°C]	-40...105				
Storage	T [°C]	-40...125				
Compensated range *****	T [°C]	-20...85		***** The mean TC are relevant for the compensated range only, outside the compensated range the total error statements apply.		
Mean TC offset	% of the range	$\leq 0,15 / 10K$				
Mean TC range	% of the range	$\leq 0,15 / 10K$				
Total error	% of the range	-40°C 2,00%	Option -200°C 4,00%			
	% of the range	105°C 2,00%				
	% of the range	180°C 3,00%	Option +200°C 4,00%			

#### MECHANICAL PARAMETER

Wetted components		stainless steel, titanium			
Housing		stainless steel			
Weight	m [g]	80-120	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		
Approvals		CE Declarations of conformity 2014/30/EU, 2014/68/EU			

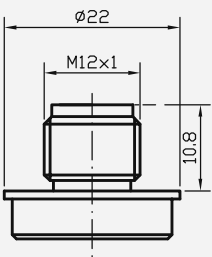
IP system of protection (IEC 605029) up to IP69K      The IP system of protection as specified in the data sheets generally applies, with appropriate mating plug connected.

Configurations -examples-

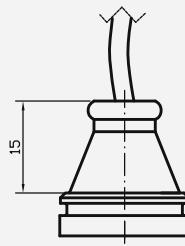


Electrical connections\* -examples-

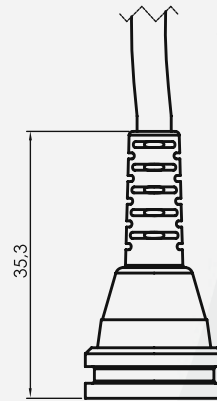
male socket  
M12x1 (S 763)



cable output  
(IP67/IP69K)

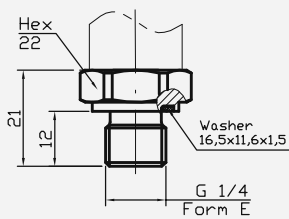


cable output  
(IP67) with  
bend protection

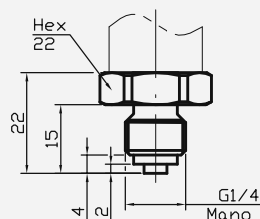


Pressure Connections\* -examples-

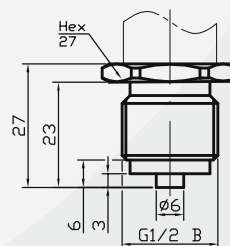
G 1/4 A; DIN 3852; Form E



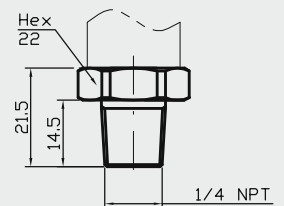
G 1/4 B



G 1/2 B

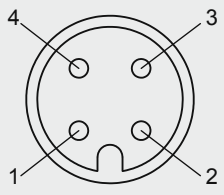


1/4 NPT



\* customer specific configurations available

### Electrical Configuration\*

Plug M12x1	Cable port
	
<b>2-wire</b> 1: UB+ 2: nc 3: out 4: nc	<b>2-wire</b> red: UB+ black: out white: nc
<b>3-wire</b> 1: UB+ 2: nc 3: UB- 4: out	<b>3-wire</b> red: UB+ black: UB- white: out

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	SME	Pressure Transmitter in Miniature Design
DPSX9I	Intrinsically Safe Electronic Pressure Switch for Current	SMF	Pressure Transmitter with Flush Diaphragm
DPSX9U	Intrinsically Safe Electronic Pressure Switch for Voltage	SMH	High Pressure Transmitter
PS1/17	Level Sensor	SML	Pressure Transmitter for Industrial Application
PSX2	Intrinsically Safe Level Sensor	SMO	Pressure Transmitter in Mobile Hydraulics
SHP	High Precision Pressure Transmitter	SMS	OEM Pressure Transmitter for Hydraulics and Pneumatics
SIS	Low Pressure Transmitter in Short and Compact Design	SMX	Intrinsically Safe Pressure Transmitter for Industrial Application
SIL	Low Pressure Transmitter for Industrial Application	SMX2	Intrinsically Safe Pressure Transmitter for Industrial Application
SKE	High Temperature Pressure Transmitter with Detached Electronics	TPSE	Multi-Function Transmitter for Pressure and Temperature – external sensor
SKL	High Temperature Pressure Transmitter with Cooling Fins	TPSI	Multi-Function Transmitter for Pressure and Temperature – internal sensor
SMC	Pressure Transmitter with CANopen Interface and J1939		

