High Temperature Pressure Transmitter with Detached Electronics

S K E

Main features

- Measuring ranges 0...1 bar to 0...2000 bar
- All standard signals for industry, hydraulics and pneumatics
- Media temperature range -40°C to 180°C (others on request)
- Ambient temperature range -40°C to 105°C
- Shock and vibration-resistant > 1000 g shock, > 20 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
- Precision class 1 %

Applications

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

Description

The **SKE with detached electronics** has been designed for application in conditions of high temperatures. **In order to achieve application in yet higher temperature ranges,** the electronics has been separated from the pressure cell controlling it by means of Teflon cable. Thereby, the electronics can be installed in lower ambient temperatures. Thanks to its stainless steel diaphragm and semiconductor thin-film technology, this pressure transmitter has excellent properties.

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 modular design offers a variety of signal, thread and connecting options.

The SKE series is suited for application in environments exposed to high thermal load.

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Specification

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

ELECTRICAL PARAMETER		signal		U_S [V_{DC}]	R_L [kΩ]	RA [Ω]
Output signal * and	R_A in Ohm	4...20 mA	(2-wire, 3-wire)	9...32		acc. to R_A = < (U_S - 10V) / 0,02 A
maximum acceptable burden R_A		0...10 V_{DC}	(3-wire)	12...32	> 5,0	
		1...5 V_{DC}		8...32	> 1,0	
		0,5...4,5 V_{DC}	ratiometric	5 ±10%	> 4,7	
Response time * (10-90%)	t [ms]	< 1				
Withstand voltage	U [V_{DC}]	350	option 710			

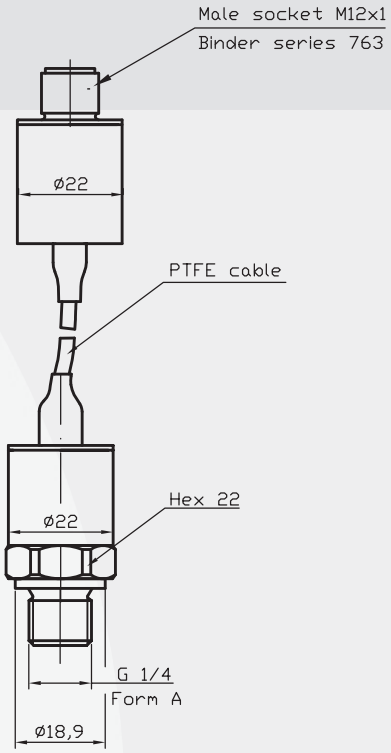
ACCURACY			
Accuracy @RT	% of the range	≤ 1,00**	
	BFSL	≤ 0,125	
Non-linearity	% of the range	≤ 0,15	
Repeatability	% of the range	≤ 0,10	** incl. nonlinearity, hysteresis, repeatability, zero-offset- and final-offset
Stability/year	% of the range	≤ 0,10	(acc. to IEC 61298-2)

ACCEPTABLE TEMPERATURE RANGES			
Measuring medium	T [°C]	-40...180	(option to 200)
Ambience	T [°C]	-40...105	
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]	~ 120	(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 compensation. From a pressure range of 60bar, a ventilated mating plug and/or cable is not necessarily required.		

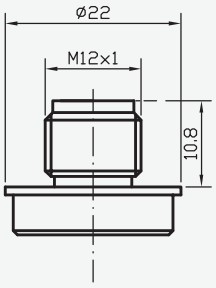
*** others upon request**

Configuration -example-



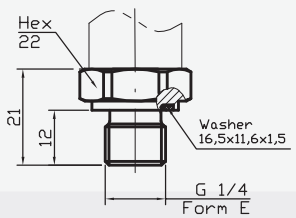
Connectors*

male socket
M12x1 (S 763)

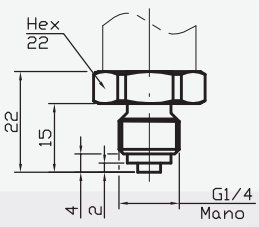


Pressure Connections*

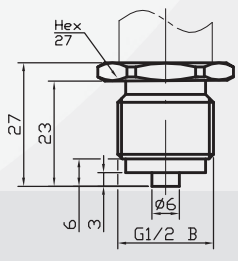
G ¼ A; DIN 3852; Form E



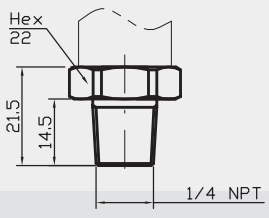
G ¼ B



G ½ B



¼ NPT



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

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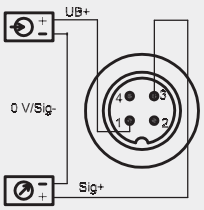
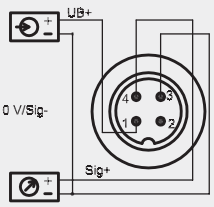
Electrical Connections* (left: 2-wire, right: 3-wire)

male
socket
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		

MEGATRON

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