



AE- SMX2

Intrinsically Safe Pressure Transmitter for Industrial Use

Main features

- Measuring ranges 0...10 mbar to 0...2000 bar
- Explosion-proof certificate for zone 0
II 1G Ex ia IIB T4 Ga or II 1G Ex ia IIC T4 Ga
- Explosion-proof certificate for zone 1
II 2G Ex ia IIC T4 Gb
- Output signal 4...20 mA
- Highly reliable
- Digital version: ZERO function, down scale 4:1



Applications

- Chemical industry
- Oil and gas industry
- Food and drug industry
- Plant engineering and automation technology

Description

The SMX2 can be configured in both zone 0 and zone 1 and meets the requirements of Directive IExU 10 Atex 1014. Appropriate protective circuits guarantee inverse-polarity protection, overvoltage resistance and limitation of capacity loss in the event of any failure. Its widely ranging industrial applications are guaranteed by its high precision and robust and compact design.

A wide range of pressure transducers is on offer with the possibility of combining various mechanical and electrical connections.

zone 0 An area where an explosive atmosphere of a mix of air and combustible gases, vapours or sprays is permanently, over long periods or frequently prevails.

zone 1 An area where an explosive atmosphere of a mix of combustible materials in the form of gas, vapour or spray with air occurs occasionally in normal operation.

Safety Note:

When fitting, commissioning and operating this pressure transmitter, please observe relevant national safety regulations by all means.



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Specifications

PRESSURE RANGE


Measuring range* silicon technology	p [mbar]	10	16	20	25	40		
Overload pressure	p [mbar]	50	80	100	125	200		
Burst pressure	p [mbar]	100	160	200	250	400		
Measuring range* silicon technology	p [mbar]	60	100	160	200	250	400	600
Overload pressure	p [mbar]	120	200	360	400	500	800	1200
Burst pressure	p [mbar]	180	300	480	600	750	1200	1800
Measuring range* stainless steel diaphragm	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* stainless steel diaphragm	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* stainless steel diaphragm	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

(Vacuum, relative pressure, +- or absolute pressure are available), Please note: > 1000 bar with thread M18x1,5

ELECTRICAL PARAMETER

Output signal*	2-wire		4...20 mA	
Supply voltage	$U_s [V_{DC}]$	20...27		
Load resistor	$R_A [\Omega]$	acc. to $R_A = < (U_s - 20V) / 0,02 A$		
Response time	$t [ms]$	≥ 4 (digital)	≥ 1 (analog)	
Maximum supply current	$I [mA]$	23 mA		
Isolation voltage	$U [V_{DC}]$	500 VAC		
ACCURACY	pressure range 1 bar to 2000 bar		pressure range 10 mbar to 600 mbar	
Accuracy @ RT	% of the range	$\leq 0,50^{**}$ option 0,25	$\leq 1,00^{**}$ option $\leq 0,5$	
Non-linearity	BFSL	$\leq 0,15$	** incl. nonlinearity, hysteresis, repeatability,	
Stability/year	% of the range	$\leq 0,15$	zero-offset- and final-offset (acc. to IEC 61298-2)	
ACCEPTABLE TEMPERATURE RANGES	zone 0		zone 1	
Measuring medium	$T [^{\circ}C]$	-20...60	-40...100	
Ambience	$T [^{\circ}C]$	-20...60	-40...85	
Storage	$T [^{\circ}C]$	-40...120	-40...120	
Compensated range*	$T [^{\circ}C]$	-20...60	-20...85	
Mean TC offset	% of the range	$\leq 0,15 / 10K$	$\leq 0,15 / 10K$	
Mean TC range	% of the range	$\leq 0,15 / 10K$	$\leq 0,15 / 10K$	
Total error	% of the range	-20°C 1,00%	digital: -40°C 1,00%	analog: -40°C 2,00%
	% of the range	60°C 1,00%	digital: 85°C 1,00%	analog: 85°C 2,00%
Directive ATEX	Zone 0***		Zone 1***	
Type of ignition protection	II 1G Ex ia IIB T4 Ga		II 2G Ex ia IIC T4 Gb	
Type of ignition protection	II 1G Ex ia IIC T4 Ga (for connector M12x1 only)			
Underlying standards	EN 60079-0, EN 60079-11, EN 60079-26, EN 60079-14 (both zones)			
Maximum connected power	27 V, 125mA, 0,85 W		27 V, 125mA, 0,85 W	
Temperature class	T4 (Ambience -20...+60° C)		T4 (Ambience -40...+85° C)	

MECHANICAL PARAMETER

Parts in contact with the measuring medium*	stainless steel	for pressure range of 1 bar to 2000 bar
Parts in contact with the measuring medium*	silicon	for pressure range of 10 mbar to 600 mbar
Housing*	stainless steel	
Shock resistance	g	1000 acc. to DIN EN 60068-2-32 – free fall
Vibration resistance	g	20 acc. to DIN EN 60068-2-6 – vibration sinusoidal
G-Force	g	50 acc. to DIN EN 60068-2-27 – shock
Mass	m [g]	~150 depending on design
Approval	IBExU10ATEX1014 	
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.	

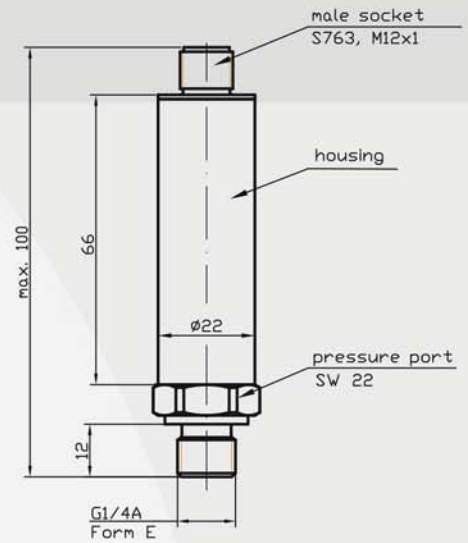
* customer specific configurations available

Configurations -examples-

SMX2 with M12x1 (S763)

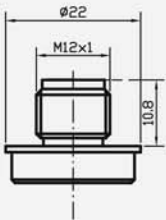


M12x1 (S763)

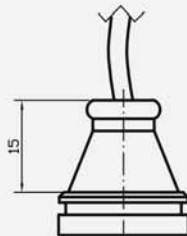


Electrical connections* -examples-

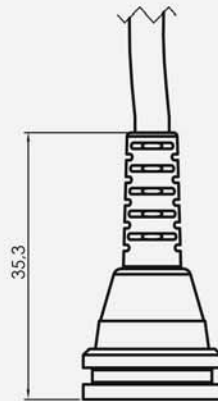
male socket M12x1 (S763) (IP67)



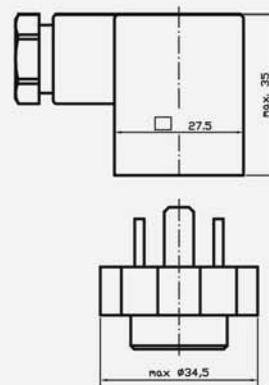
cable output plastic (IP67/IP69k)



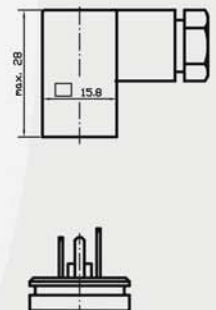
cable output (IP67) with bend protection



MVS/A DIN EN 175301-803 (IP65)

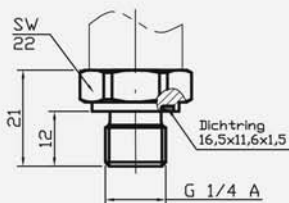


MVS/C DIN EN 175301-803 (IP65)

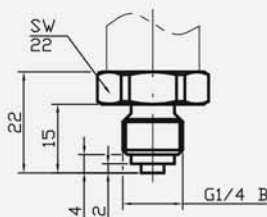


Pressure Connections* -examples-

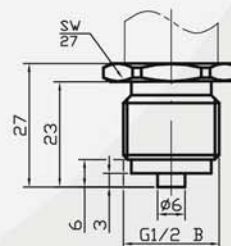
G 1/4 A; Form E



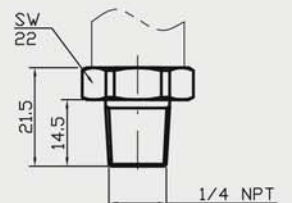
G 1/4 B



G 1/2 B



1/4 NPT



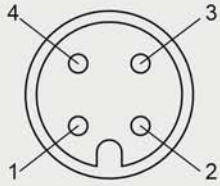
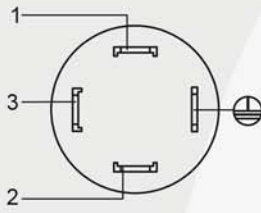
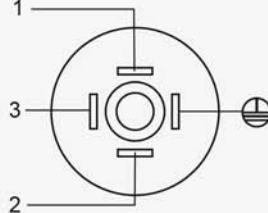
* customer specific configurations available



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Electrical Connections*

Plug M12x1	Cable port	DIN EN 175301-803-A	DIN EN 175301-803-C
			
2-wire 1: UB+ 2: nc 3: out 4: nc	4-wire cable ventilated and unventilated red: Loop + black: Loop - white: (clk) green: (dat)	2-wire 1: UB+ 2: out 3: nc Ⓧ: nc	2-wire 1: UB+ 2: out 3: nc Ⓧ: nc

nc = not connected

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

Signals clk and dat must not be assigned for operation within explosion zones.

* custom-made adjustments are possible

Connectors

MVC/A DIN EN 175301-803	II 1G Ex ia IIB T4
Round connector DIN 75585 3-/4- contacts	II 1G Ex ia IIB T4
Cable output steel	II 1G Ex ia IIB T4
Cable output plastic	II 1G Ex ia IIB T4
Cable gland	II 1G Ex ia IIB T4
Deutsch-connector 2-contacts	II 1G Ex ia IIB T4
Deutsch-connector 3-contacts	II 1G Ex ia IIB T4
Deutsch-connector 4-contacts	II 1G Ex ia IIB T4
Superseal	II 1G Ex ia IIB T4
Junior-Timer connector	II 1G Ex ia IIB T4
Packard connector	II 1G Ex ia IIB T4
MVS/C DIN EN 175301-803	II 1G Ex ia IIB T4
Male Socket M12x1 (S763)	II 1G Ex ia IIC T4



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Subject to change
 due to technical progress.
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