

# PASSIVE PRESSURE TRANSMITTER TM AND TM/EX



20/21



II 1G EEx ia IIC T3...T6  
II 1D T90°C IP 6X

## Features

- Piezoresistive measuring element
- Gauge, absolute or sealed gauge
- All pressure ranges between 0...50 mbar and -1...1000 bar available
- Calibration available for all common pressure units
- High reliability
- Short delivery time
- Customized versions due to modular assembly
- Low current consumption due to the high input impedance
- Media temperature up to 150°C

## Typical applications

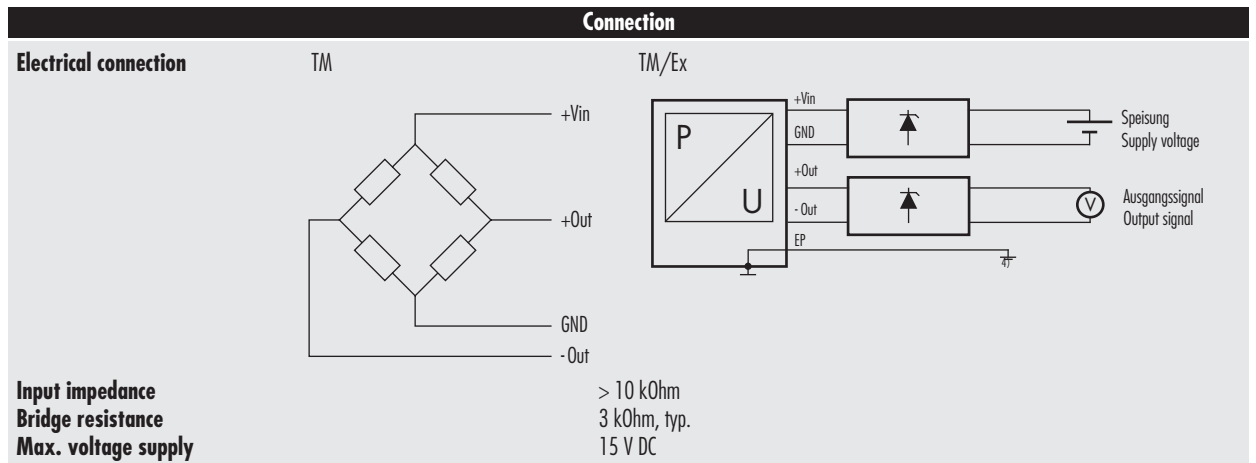
- Machine installations
- Industrial process control
- Environmental monitoring
- Food industry
- Mobile hydraulics
- Test and calibration systems
- Explosive areas

## Specifications

Pressure range	[bar]	... 0.5	> 0.5 ... 2	> 2 ... 25	> 25 ... 600	> 600 ... 1000
<b>Overpressure</b>		3 bar	3 x FS (min. 3 bar)	3 x FS	3 x FS (max. 850 bar, optional up to 1500 bar)	1500 bar
<b>Burst pressure</b>	[bar]	≥ 200	≥ 200	≥ 200	≥ 850 (optional up to 1500 bar)	≥ 1500
<b>Accuracy<sup>1)</sup></b>	[± % FS]	≤ 0.5	≤ 0.5 (optional up to 0.25)	≤ 0.5 (optional up to 0.25)	≤ 0.5 (optional up to 0.25)	≤ 1 (optional bis 0.5)
<b>Thermal shift</b>	[± % FS/°C]					
Zero	0...70°C	≤ 0.06 <sup>2)</sup>	≤ 0.03	≤ 0.015	≤ 0.015	≤ 0.015
	-25...85°C	≤ 0.08 <sup>3)</sup>	≤ 0.04	≤ 0.02	≤ 0.02	≤ 0.02
Span	0...70°C	≤ 0.015	≤ 0.015	≤ 0.015	≤ 0.015	≤ 0.015
	-25...85°C	≤ 0.02	≤ 0.02	≤ 0.02	≤ 0.02	≤ 0.02
<b>Response time</b>		≤ 1 ms/10...90% FS				
<b>Long term signal</b> (1 year)-(typ./max)		≤ 0.5% FS/< 4 mbar	≤ 0.2% FS/< 4 mbar	≤ 0.1% FS/< 0.2% FS	≤ 0.1% FS/< 0.2% FS	≤ 0.1% FS/< 0.2% FS

## Electrical data

Pressure range	[bar]	up to 0.25	> 0.25 ... 0.6	> 0.6 ... 1	> 1 ... 2.5	> 2.5
<b>Full scale signal typ.</b> (10V DC voltage supply)	[mV]	15	25	35	50	100



**Ex-Approval**

<b>Type of protection</b>	II 1G EEx ia IIC T3...T6 (SEE Certificate SEV 04 ATEX 0149) II 1D T90°C IP 6X			
<b>Max. values for supply / output circuit</b>	20V / 300 mA / 1.2 W (Zener barrier) <sup>6)</sup>			
<b>Temperature class</b>		<b>T6</b>	<b>T4</b>	<b>T3</b>
Ambient temperature Ta	[°C]	-25...55	-25...85	-25...85
Process temperature	[°C]	-25...55	-25...100	-25...150

Whitout any information about temperature class the transmitter will be delivered for T4.

**Materials**

<b>Process connection, diaphragm, housing</b>	Stainless steel 1.4435 (316L) (other materials on request)
<b>Seals</b> (standard)	Viton (other materials see ordering information)

<sup>1)</sup> Zero based non-conformity according to DIN 16086, including hysteresis and repeatability

<sup>2)</sup> 50 - 99 mbar: ≤ 0.12

<sup>3)</sup> 50 - 99 mbar: ≤ 0.16

<sup>4)</sup> The metal housing of the pressure transmitter must be connected to the potential equalisation system of the installation.

<sup>5)</sup> Please ask for available full scale output signals

<sup>6)</sup> Zener barrier not included



## Ordering information

		2X	X	XXXX	XX99	XX	XXX
<b>Type</b>	TM/Ex	20					
	TM	21					
<b>Pressure type</b>	Gauge	1					
	Absolute	2					
	Sealed gauge	3					
<b>Pressure range</b>	All pressure ranges between 0...50 mbar and -1...1000 bar available					XX	
<b>Pressure connection</b>	G 1/4 female (Fig. 1)				00		
	G 1/4 M (Fig. 2)				11		
	G 1/4 M, Manometer DIN 16288 (Fig. 3)				12		
	G 1/2 M (Fig. 4)				13		
	G 1/2 M, frontal diaphragm (Fig. 5)				14		
	G 1/2 M, flush diaphragm (Fig. 6)				15		
	G 1/2 M, Manometer DIN 16288 (Fig. 7)				16		
	1/2 NPT M (Fig. 8)				19		
	1/4 NPT M (Fig. 9)				10		
	Other process connection available				XX		
<b>Electrical connection</b>	Connector DIN 43650 (screw on <sup>1)</sup> ) <sup>3) 6)</sup> (Fig. 10) IP 65				01		
	Connector Binder 723, 5-pin <sup>3)</sup> (Fig. 11) IP 67				03		
	Connector Binder 723, 5-polig (screw on <sup>1)</sup> ) <sup>3)</sup> (Fig. 12) IP 67				43		
	Connector MIL C26482, (10-6) <sup>3)</sup> (Fig. 13) IP 40				06		
	PE cable <sup>4) 5) 6)</sup> (Fig. 14) IP 67				13		
	PUR cable <sup>4)</sup> (Fig. 14) IP 67				15 <sup>6)</sup> /17 <sup>7)</sup>		
	Teflon cable <sup>4)</sup> (Fig. 14) IP 67				21 <sup>6)</sup> /22 <sup>7)</sup>		
	Other electrical connection available				XX		
<b>Output signal</b>	0 bis ..... mV (specified by the customer)					99	
<b>Accuracy</b>	≤ ± 0.5 % FS					0	
	≤ ± 0.25 % FS (on request)					1	
<b>Temperature class (TM/Ex)</b>	T6 (Ta: -25...55 °C comp.)					0	
	T4 (Ta: -25...85 °C comp.)					1	
	T3 (Ta: -25...85 °C comp., max. medium temperature 150 °C)					2	
<b>Temperature range (TM)</b>	Compensated 0...70°C ( 0... 80°C)					0	
	Compensated 25...100°C (medium temperature -25...150°C)					7	
	Compensated -25...85°C (medium temperature -25...100°C)					1	
	Compensated -25...85°C (medium temperature -25...150°C)					5	
<b>Options</b>	Throttle <sup>2)</sup>						A
	Packed in gel:	gauge transmitters					C
		absolute and sealed gauge transmitters					D
	Spec. oil filling in TD:	for food applications					G
		Halocarbon (for oxygen applications)					H
		AS100 (for media temp. -55...150°C suitable)					J
		PAO4 (free of silicon)					Q
	Seals:	Viton (standard)					U
		EPDM					S
		Kalrez					T
Version titanium					K		

<sup>1)</sup> Zero offset and span adjustable

<sup>3)</sup> Cable socket connector not included

<sup>5)</sup> with drinking water approval (KTW)

<sup>2)</sup> Available only with pressure connection fig. 2, 4, 7, 8 or fig. 9 <sup>4)</sup> Please specify the medium and the required cable length <sup>6)</sup> only TM / <sup>7)</sup> only TM/Ex

## Pressure connection

## Dimensions

## Electrical connection

Fig. 1

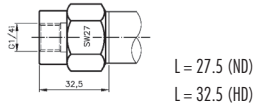


Fig. 2

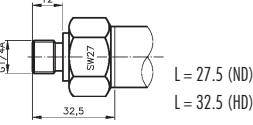


Fig. 3

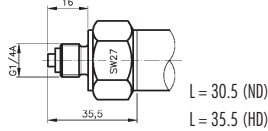


Fig. 4

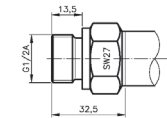


Fig. 5

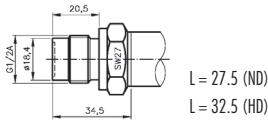


Fig. 6

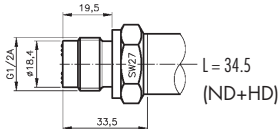


Fig. 7

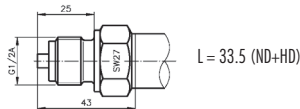


Fig. 8

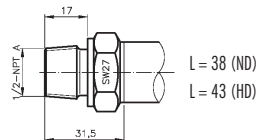
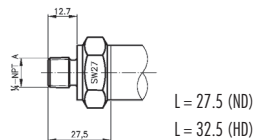
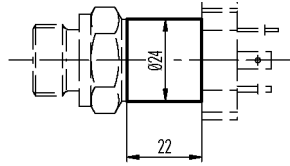


Fig. 9



Variante für Medientemperatur bis 150°C



L = 31.5 (ND)      ND = Low pressure ≤ 30 bar  
L = 36.5 (HD)      HD = High pressure > 30 bar

Fig. 10

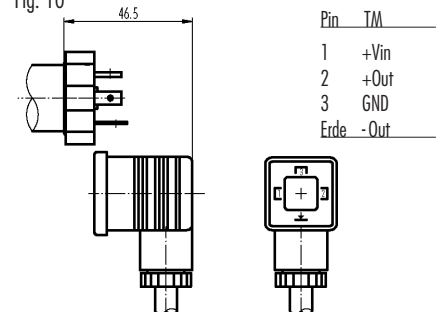


Fig. 11

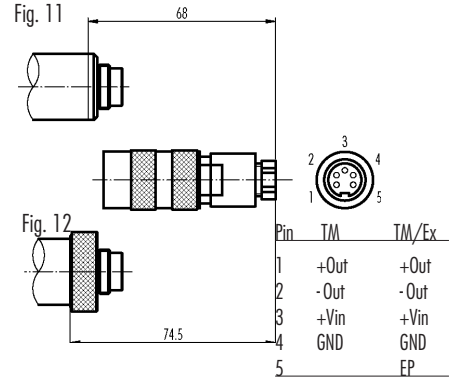


Fig. 12

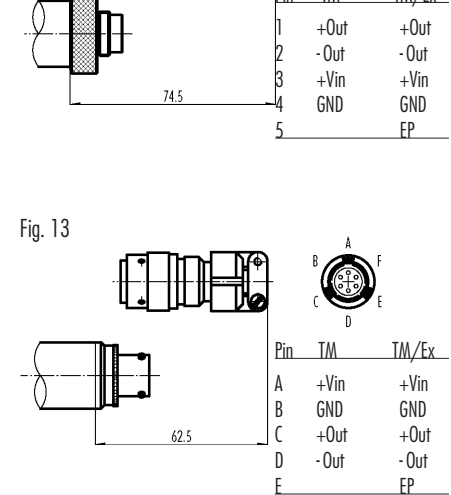


Fig. 13

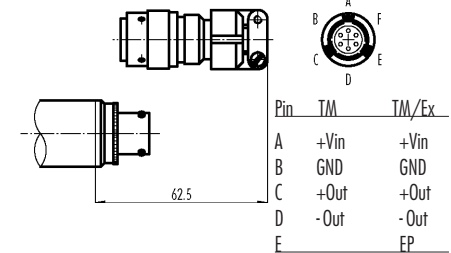
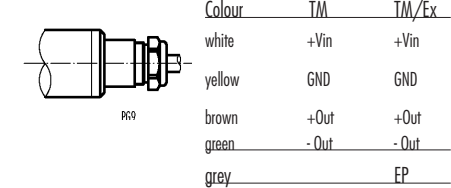


Fig. 14



Specifications may change without notice.

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