

PROGRAMMABLE PRESSURE TRANSMITTER PTM (2-wire)



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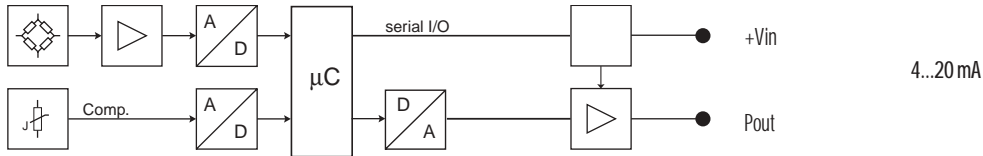
Features

- Piezoresistive measuring element
- Adjustable 1:4 of the nominal range within -5% to +105% FS
- Pressure ranges from 0...100 mbar to 0...1000 bar
- Pressure units selectable
- Adjustable delay
- Reverse polarity and short circuit protected
- Medium temperature up to 150°C (option)

Typical applications

- Industrial measurement
- Process & Control
- Food & Beverage
- Hydraulic
- Test benches

Specifications



Pressure range	[bar]	0.1 ... 0.5	> 0.5 ... 2	> 2 ... 25	> 25 ... 600	> 600 ... 1000
Overpressure		3 bar	3 x FS (min. 3 bar)	3 x FS	3 x FS (max. 850 bar, optional up to 1500 bar)	1500 bar
Burst pressure		> 200 bar	> 200 bar	> 200 bar	> 850 bar (optional to 1500 bar)	> 1500 bar
Thermal shift	[± % FS/°C]					
Zero	0...70°C	0.06 ³⁾	0.03	0.015	0.015	0.015
	-25...85°C	0.08 ⁴⁾	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
Total error¹⁾	[± % FS]					
active compensated	-10...50°C	≤ 0.15/0.3	≤ 0.15/0.3	≤ 0.1/0.15	≤ 0.1/0.15	0.1/0.15
(typ./max.)	-25...85°C	≤ 0.65/0.7 (≤ 200mbar: 0.3/0.6)	≤ 0.65/0.7	≤ 0.55/0.7	≤ 0.55/0.7	≤ 0.55/0.7
Accuracy²⁾		≤ ± 0.25 % FS, ≤ 500mbar ≤ ± 0.1 % FS, > 500mbar				

Electrical specifications

Supply voltage	Range:	9...33VDC
	Supply voltage influence:	< 0.1 % FS
Analog Output	Resolution:	≤ ± 0.025 % FS
	Output at 4mA:	adjustable between -5% FS... 105 % FS
	Output signal at 20mA:	adjustable between -5% FS... 105 % FS
	Span:	adjustable between 25% FS... 110% FS, min. 50mbar
	Adjustable delay:	100ms, 1s, 10s, (standard approx. 30ms)
Load resistance		$R_L = U_B [V] - 6.6V / 0.02A$
Load resistance influence		< 0.1 % FS
Interface³⁾		VART199 incl. PC-Software (VART244)

Materials

Process connection, Diaphragm, Housing Stainless steel 1.4435 (316L) other materials (e.g. titanium) on request
Seals (standard) Viton (other materials see ordering code)

Electromagnetic compatibility

Standard	Level	Typical interferences	
Emission:			
EN 61000-6-3	Generic emission standard		
EN 55022	Emission, class B		
Immunity:			
EN 61000-6-2	Generic immunity		
EN 61000-4-2	Electrostatic discharge	4kV contact, 8kV air	
EN 61000-4-3	Radiated electro-magnetic field	10V/m, 80-1000 MHz, 80% AM 1kHz	Cellular phones, radio sets
EN 61000-4-3	Radiated electro-magnetic field (GSM)	10V/m, 950 MHz, 200Hz on/off	Digital portable phones
EN 61000-4-4	Fast transients (burst)	2 kV	Motors, valves
EN 61000-4-6	Conducted radio-frequency	10V, 0.15-80 MHz, 80% AM 1kHz	Cellular phones, radio sets
EN 61000-4-5	Surge	10 kA (8/20 ms) ⁶⁾	Lightning strikes

¹⁾ Total temperature error including accuracy

²⁾ Zero based non-conformity according to DIN 16086, including hysteresis and repeatability

³⁾ 50...99mbar: ≤ 0.12

⁴⁾ 50...99mbar: ≤ 0.16

⁵⁾ Please order separately

⁶⁾ Only with optional surge (lightning) protection

Ordering information

		40	X	XXXX	XXXX	XX	XXX
Type	PTM	40					
Pressure type	Gauge	1					
	Absolute	2					
	Sealed gauge	3					
Pressure range	0...100 mbar			00			
	0...160 mbar			01			
	0...250 mbar			02			
	0...400 mbar			03			
	0...600 mbar			04			
	0...1.0 bar			05			
	0...1.6 bar			06			
	0...2.5 bar			07			
	0...4.0 bar			08			
	0...6.0 bar			09			
	0...10 bar			10			
	0...16 bar			11			
	0...25 bar			12			
	0...40 bar	3		13			
	0...60 bar	3		14			
	0...100 bar	3		15			
	0...160 bar	3		16			
	0...250 bar	3		17			
	0...400 bar	3		18			
	0...600 bar	3		19			
0...1000 bar	3		20				
	Customized calibration			99			
Process connection	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	
	1/4 NPT M (Fig. 8)					10	
	1/2 NPT M (Fig. 9)					19	
	Customized process connection					99	
Electrical connection	Connector DIN 43650 (screwed on) ²⁾ (Fig. 10)	IP 65				01	
	Connector Binder 723, 5-pins ²⁾ (Fig. 11)	IP 67				03	
	Connector Binder 723, 7-pins ²⁾ (Fig. 11)	IP 67				04	
	Connector MIL C26482, (10-6) ²⁾ (Fig. 13)	IP 40				06	
	Connector Lumberg RSF4 (M12x1), 4-pins (Fig. 14)	IP 65				07	
	PE cable ³⁾⁴⁾ (Fig. 15)	IP 67				13	
	PUR cable ³⁾ (Fig. 15)	IP 67				15	
	Teflon cable ³⁾ (Fig. 15)	IP 67				21	
	Customized connection on request					99	
Output signal	4...20 mA					05	
	4...20 mA with surge protection (lightning)					08	
Accuracy	≤± 0.25 % FS (for pressure ≤ 500mbar)						1
	≤± 0.1 % FS (for pressure > 500mbar)						2
Temperature range	0...70°C (-10...50°C comp., max. medium temp. 0...80°C)						0
	-25...85°C compensated (max. medium temperature -25...100°C)						1
	-25...85°C compensated (max. medium temperature -25...150°C)						2
Options	Throttle ¹⁾						A
	Electronic packed in gel:	Gauge pressure					C
		Abs. and sealed gauge pressure					D
	Special oil filling in the TD:	for food applications					G
		Halocarbon (for oxygen applications)					H
		AS100 for medium temp. -55...150°C suitable)					J
		PAO4 (free of silicon)					Q
	Seals:	Viton (Standard)					U
		EPDM					S
		Kalrez					T
		active Temperature compensation					E
	Version titanium					K	

¹⁾ Only for process connections fig. 2, fig. 4, fig. 7, fig. 8 or fig. 9

²⁾ Cable socket connector not included

³⁾ Please specify the medium and the required cable length

⁴⁾ Suitable for drinking water (food approved)

Process Connection

Dimensions

Electrical Connection

Fig. 1



Fig. 2

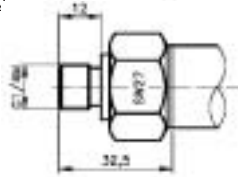


Fig. 3

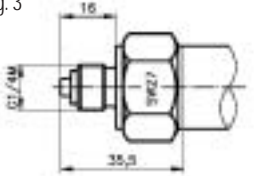


Fig. 4

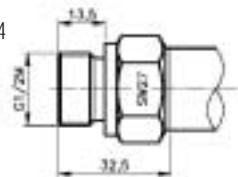


Fig. 5

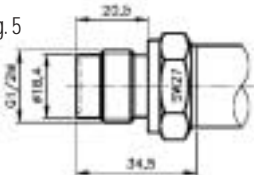


Fig. 6

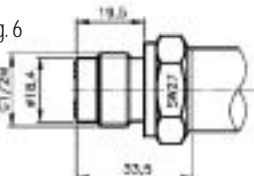


Fig. 7

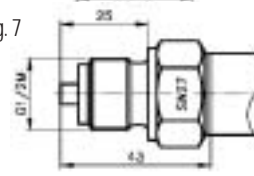


Fig. 8

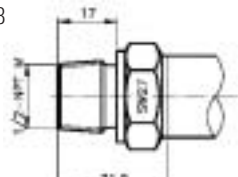
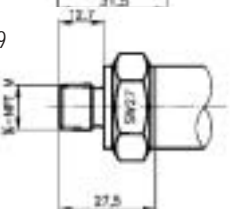
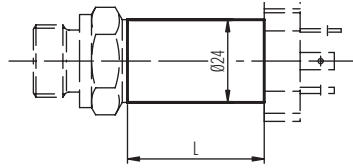


Fig. 9

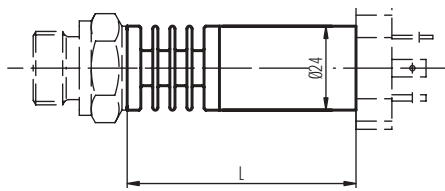


Version for medium temperature up to 100°C



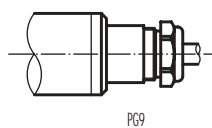
L = 74 mm for connector DIN 43650 (Fig.10)

Version for medium temperature > 100°C up to 150°C



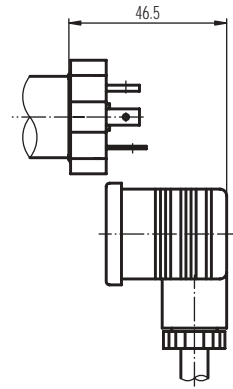
L = 101 mm for connector DIN 43650 (Fig.10)

Fig. 15



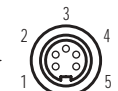
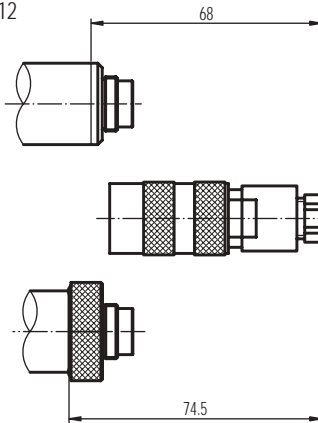
Colour	2-wire
white	+Vin
yellow	Pout

Fig. 10



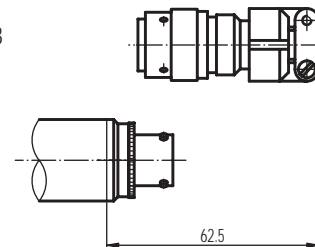
Pin	2-wire
1	+Vin
2	Pout

Fig. 11/12



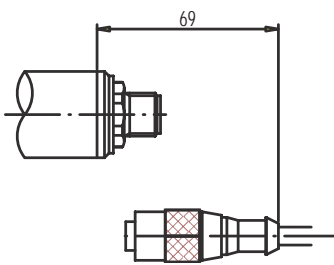
Pin	2-wire
1	Pout
2	
3	+Vin
4	
5	

Fig. 13



Pin	2-wire
A	+Vin
B	
C	Pout
D	

Fig. 14



Pin	2-wire
1	
2	
3	Pout
4	+Vin

Specifications may change without notice.

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Schweiz

STS Sensor Technik Sirmach AG
Rüthhofstrasse 8
CH - 8370 Sirmach
Tel.: +41 (0)71 969 49 29
Fax: +41 (0)71 969 49 20
e-mail: sales@sts-ag.ch
Internet: www.sts-ag.com

Germany

STS Sensoren Transmitter
Systeme GmbH
Mercedesstrasse 1
D - 71063 Sindelfingen
Tel.: +49 (0)7031 811 920
Fax: +49 (0)7031 811 958
e-mail: sts.gmbh@t-online.de
Internet: www.sts-ag.com

Italy

STS Italia s.r.l.
Via Gesù 5
I - 20090 Opera (MI)
Tel.: +39 02 57607073/074
Fax: +39 02 57607110
e-mail: stsopera@tin.it
Internet: www.sts-ag.com

France

STS France
66, Avenue de la Gare
FR - 74100 Annemasse
Tel.: +33 (0)4 50 37 69 25
Fax: +33 (0)4 50 39 42 25
e-mail: info@stsfrence.fr
Internet: www.sts-ag.com

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