

PROGRAMMABLE PRESSURE TRANSMITTER PTM (RS485)



43



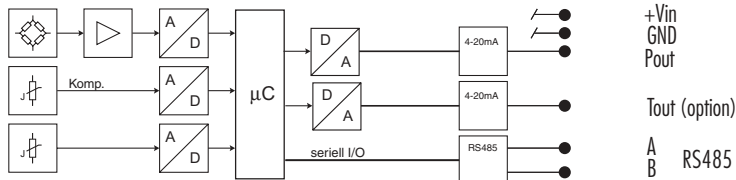
Features

- Piezoresistive measuring element
- Adjustable 1:4 of the nominal range within -5% to +105% FS
- All pressure ranges between 0...50 mbar and -1...1000 bar available
- Pressure units adjustable
- Recalibration function for zero and span
- Adjustable time delay
- Reverse polarity and short circuit protected
- Interface RS485 (MODBUS)
Output: pressure and temperature
- Active compensated (option)
(Digital temperature compensated)

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 (minimal 3 bar)	3 x FS	3 x FS (maximum 850 bar, optional 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 ⁴⁾	≤ 0.03	≤ 0.015	≤ 0.015	≤ 0.015
	-25...85°C	≤ 0.08 ⁵⁾	≤ 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
Active compensated (Z+S) (typ./max.)	-10...50°C	≤ 0.01/0.015	≤ 0.01/0.015	≤ 0.01/0.015	≤ 0.01/0.015	≤ 0.01/0.015
	-25...85°C	≤ 0.015/0.02	≤ 0.015/0.02	≤ 0.015/0.02	≤ 0.015/0.02	≤ 0.015/0.02
Accuracy ¹⁾		≤ ± 0.25 % FS ≤ ± 0.1 % FS, ≥ 500 mbar ≤ ± 0.1 % FS, activ compensated (option)				

Electrical specifications

Supply voltage	Range: Supply voltage influence:	9...30 VDC < 0.1 % FS
Analog Output	Standard: Activ compensated: Resolution: Output at 4 mA: Output at 20 mA: Span: Adjustable time delay: Temperature output (precision):	RS485 (pressure) and 4...20mA (pressure) RS485 (pressure and temperature) and 4...20mA (pressure and temperature) ≤ ± 0.025 % (analog output), ± 0.01 % (digital output) adjustable between -5% FS... 105 % FS adjustable between -5% FS... 105 % FS adjustable between 25% FS... 110% FS, min. 50 mbar 100 ms, 1 s, 10 s, (standard approx. 30 ms) ± 1°C
Load resistance Load resistance influence		$R_L = U_B [V] - 6V / 0.02A$, 1 kOhm max. < 0.1 % FS
Protocol		MODBUS, Layer 7
Interface ³⁾		VART199 incl. PC-Program (VART244)

Materials

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

Standard	Level	Typical interferences	
Emission: EN 61000-6-3 EN 55022	Generic emission standard 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 µs) ²⁾	Lightning strikes

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

²⁾ Only with optional surge (lightning) protection

³⁾ Interface not included

⁴⁾ 50 – 99 mbar: ≤ 0.12

⁵⁾ 50 – 99 mbar: ≤ 0.16

Ordering information

		43	X	. XXXX	. XXXX	. XX	. XXX
Type	PTM	43					
Pressure type	Gauge	1					
	Absolute	2					
	Sealed gauge	3					
Pressure range	All pressure ranges between 0...50 mbar and -1...1000 bar available		XX				
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				10		
	1/2 NPT M (Fig. 8)				19		
	Other process connector available				XX		
Electrical connection	Connector Binder 723, 7-pins ²⁾ (Fig. 10)	IP 67			04		
	Connector MIL C26482, (10-6) ²⁾ (Fig. 11)	IP 40			06		
	PE cable ^{3) 4) 5)} (Fig. 12)	IP 67			13		
	PUR cable ^{3) 5)} (Fig. 12)	IP 67			15		
	Teflon cable ³⁾ (Fig. 12)	IP 67			21		
	Other connector available				XX		
Output signal	RS485 (pressure) and 4...20mA (pressure)				62		
	RS485 (pressure) and 4...20 mA (pressure) with overvoltage protection				64		
	RS485 (pressure) and 4...20mA (p and t)				65		
	RS485 (pressure) and 4...20 mA (p and t) with overvoltage protection				66		
	RS485 (pressure) ⁶⁾				67		
	RS485 (pressure) with overvoltage protection ⁶⁾				68		
Accuracy	≤ ± 0.25 % FS					1	
	≤ ± 0.1 % FS					2	
Temperature range	0...70°C compensated (max. medium temperature 0...80°C)						0
	-25...85°C compensated (max. medium temperature -25...85°C)						1
	Customized temperature range						9
Options	Throttle ¹⁾						A
	Electronic packed in gel:	Gauge pressure					C
		Abs. and sealed gauge pressure					D
	Special oil filling:	ASEOL Food					G
		Halocarbon					H
	Seals:	Viton (Standard)					U
		EPDM					S
		Kalrez					T
Temperature calibration active						E	
Special options on request						Z	

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

²⁾ Cable socket connector not included

³⁾ Please specify the medium and the required cable length

⁴⁾ Suitable for drinking water (food approved)

⁵⁾ For medium temperature >50°C a teflon cable must be used

⁶⁾ With option E: RS485 (p and t)

Process Connection

Dimensions

Electrical Connection

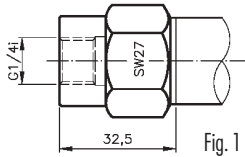


Fig. 1

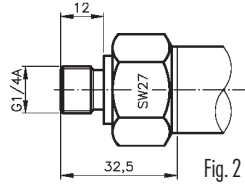


Fig. 2

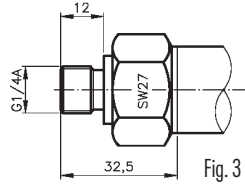


Fig. 3

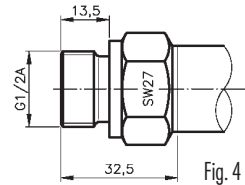


Fig. 4

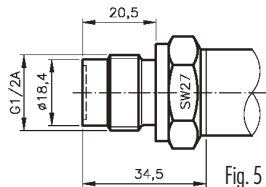


Fig. 5

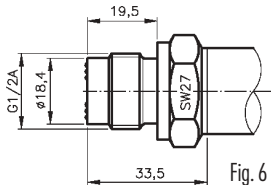


Fig. 6

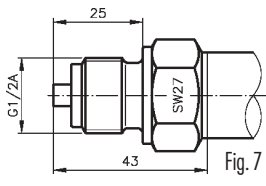


Fig. 7

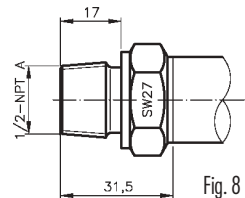
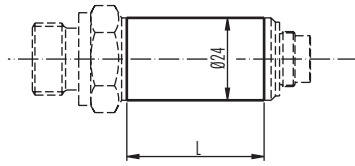


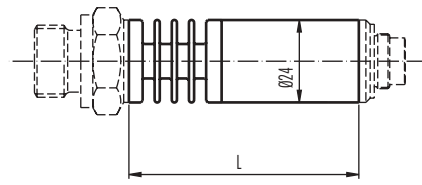
Fig. 8

Version for medium temperature up to 100°C



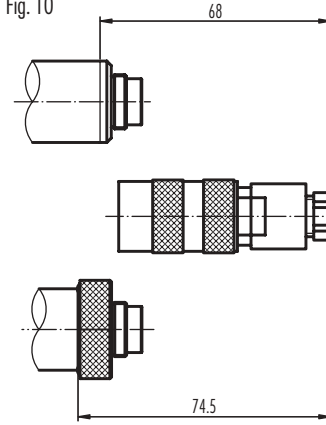
L = 94 mm, with overvoltage protection = 195 mm

Version for medium temperature up to 150°C



L = 121 mm, with overvoltage protection = 222 mm

Fig. 10



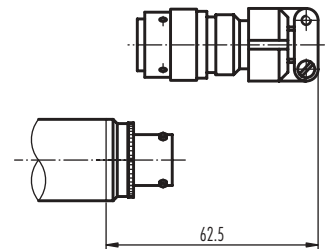
View to cable socket connector



Pin RS485

1	Pout
2	Tout
3	+Vin
4	GND
5	
6	A
7	B

Fig. 11



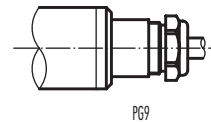
View to cable socket connector



Pin RS485

A	+Vin
B	GND
C	Pout
D	Tout
E	A
F	B

Fig. 12



Colour RS485

white	+Vin
yellow	GND
brown	Pout
pink	Tout
green	A
grey	B

Specifications may change without notice.

DED036B

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