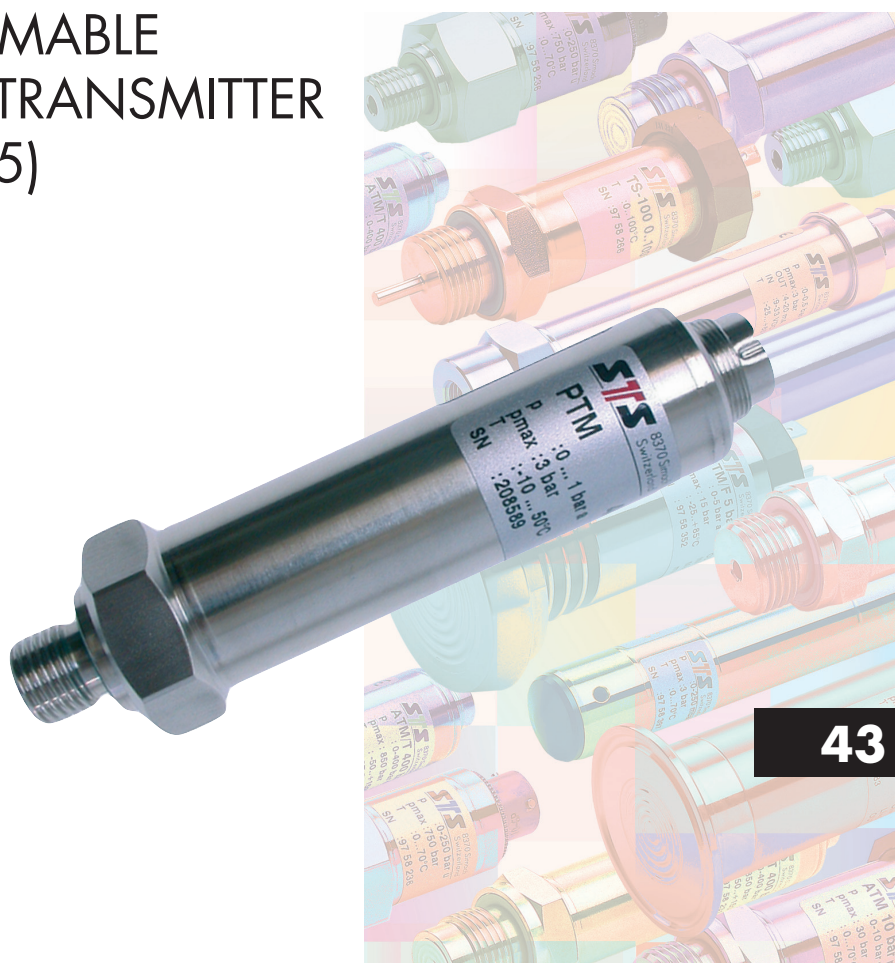


PROGRAMMABLE PRESSURE TRANSMITTER PTM (RS485)



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 0...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)

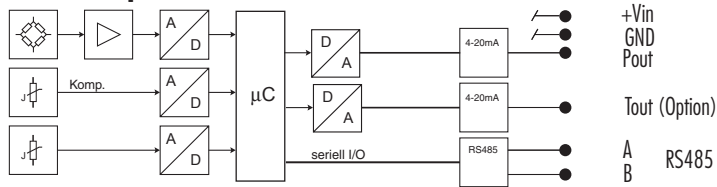
Typical applications

- Mechanical and system engineering
- Process & Control engineering
- Food & Beverage technology
- Mobile hydraulics
- Testing, measuring and control technology

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For pricing or any further information, please contact Omni Instruments Ltd.

Technical specification



Pressure ranges	[bar]	0.05 ... 0.5	> 0.5 ... 2	> 2 ... 25	> 25 ... 600	> 600 ... 1000
Overload		3 bar	3 x FS (but minimum 3 bar)	3 x FS	3 x FS (maximum 850 bar, optionally up to 1500 bar)	1500 bar
Burst pressure		≥ 200 bar	≥ 200 bar	≥ 200 bar	≥ 850 bar (optionally up to 1500 bar)	≥ 1500 bar
Temperature error	[± % FS/°C]					
Zero	0...70°C	0.06 ²⁾	0.03	0.015	0.015	0.015
	-25...85°C	0.08 ³⁾	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
Actively compensated (NP+SP)	-10...50°C	0.01/0.015	0.01/0.015	0.01/0.015	0.01/0.015	0.01/0.015
(typ./max.)	-25...85°C	0.015/0.02	0.015/0.02	0.015/0.02	0.015/0.02	0.015/0.02
Characteristic ¹⁾	≤ ± 0.25% FS					
curve deviation	≤ ± 0.1% FS, ≥ 500 mbar					
	≤ ± 0.1% FS, Actively compensated (option)					

Electrical specifications		
Supply voltage	Range:	9...30 V DC
	Supply-voltage influence:	< 0.1% FS
Outputs	Standard:	RS485 (pressure) and 4...20mA (pressure)
	Active compensated:	RS485 (pressure and temperature) and 4...20mA (pressure and temperature)
	Resolution:	≤ ± 0.025% (analogue output), ± 0.01% (digital output)
	Output at 4 mA:	adjustable from -5% FS...105% FS
	Output at 20 mA:	adjustable from -5% FS...105% FS
	Span:	adjustable from 25% FS...110% FS, min. 50 mbar
	Adjustable time delay:	100 ms, 1 s, 10 s (standard = approx. 30 ms)
	Temperature output (accuracy):	± 1°C
Permissible load resistance		$R_L = U_b [V] \cdot 6V / 0.02A$, 1 kOhm max.
Load-resistance influence		< 0.1% FS
Protocol		MODBUS (RTU, 9600 bauds)
Programming interface		VART199, including PC program (VART244)
Materials		
Pressure connection, diaphragm, housing	Stainless steel	1.4435 (316L), other materials (e.g. titanium) on request
Seals	(standard)	Viton (for other materials, see ordering information)

Electromagnetic compatibility

Standard	Level	Typical interference
Emissions:		
EN 61000-6-3	Generic emission standard	
EN 55022	Emission, class B	
Immunity:		
EN 61000-6-2	Generic immunity standard	
EN 61000-4-2	Electrostatic discharge	4 kV contact, 8 kV air
EN 61000-4-3	Radiated electromagnetic field	10V/m, 80-1000 MHz, 80% AM 1kHz
EN 61000-4-3	Radiated electromagnetic field (GSM)	10V/m, 950 MHz, 200 Hz on/off
EN 61000-4-4	Fast transients (burst)	2 kV
EN 61000-4-6	Line-conducted electromagnetic interference	10 V, 0.15-80 MHz, 80% AM 1 kHz
EN 61000-4-5	Surge	10 kA (8/20 μs) ⁴⁾
		Radio sets, wireless phones
		Digital portable phone
		Motors, valves
		Radio sets, wireless phones
		Lightnin

¹⁾ Characteristic curve deviation as per DIN 16086 start-point setting, including hysteresis and repeatability

²⁾ 50 – 99 mbar: ≤ 0.12

³⁾ 50 – 99 mbar: ≤ 0.16

⁴⁾ Only variants with optional overvoltage protection (lightning protection)

⁵⁾ Please order separately

Ordering information

		43	X	XXXX	XXXX	XX	XXX
Type	PTM	43					
Pressure type	Relative pressure	1					
	Absolute pressure (vacuum)	2					
	Overpressure	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				
	Special calibration		99				
Pressure connection	G 1/4" female (Fig. 1)		00				
	G 1/4" male (Fig. 2)		11				
	G 1/4" male DIN 16288 manometer (Fig. 3)		12				
	G 1/2" male (Fig. 4)		13				
	G 1/2" male, frontal diaphragm (Fig. 5)		14				
	G 1/2" male, flush diaphragm (Fig. 6)		15				
	G 1/2" male DIN 16288 manometer (Fig. 7)		16				
	1/4" NPT male		10				
	1/2" NPT male (Fig. 8)		19				
	Customized pressure connection		99				
Electrical connection	Connector binder 723, 7-pin ²⁾ (Fig. 10) IP 67			04			
	Connector MIL C26482, (10-6) ²⁾ (Fig. 11) IP 40			06			
	PE cable ^{3) 4)} (Fig. 12) IP 67			13			
	PUR cable ³⁾ (Fig. 12) IP 67			15			
	Teflon cable ³⁾ (Fig. 12) IP 67			21			
	Customized connection			99			
Output signal	RS485 and 4...20mA (pressure)			62			
	RS485 and 4...20mA (pressure) with overvoltage protection			64			
	RS485 and 4...20mA (pressure and temp.) ⁵⁾			65			
	RS485 and 4...20mA (pressure and temp.) with overvoltage protection ⁵⁾			66			
Deviation in characteristics	≤ ± 0.25% FS				1		
	≤ ± 0.1% FS				2		
Temperature range	0...70°C compensated (permitted medium temp. 0...80°C)				0		
	-25...85°C compensated (permitted medium temp. -25...100°C)				1		
	Customized temperature range				9		
Options	Throttle ¹⁾						A
	Moulded electronics: Relative-pressure sensors						C
	Absolute-pressure and overpressure sensors					D	
	Special oil filling (transmission fluid) in TD: ASEOL Food						G
	Halocarbon						H
	Seals: Viton (standard)						U
	EPDM						S
	Kalrez						T
	Temperature calibration active						E
	Special options on request						Z

¹⁾ Only possible with pressure connections fig. 2, fig. 4 or fig. 7

²⁾ Cable socket connector not supplied

³⁾ Please state desired cable length when ordering

⁴⁾ Food-safe

⁵⁾ Only available with option E (active temperature compensation)

Pressure connections

Dimensions

Electrical connections

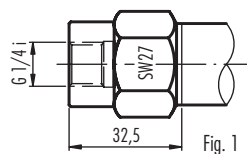


Fig. 1

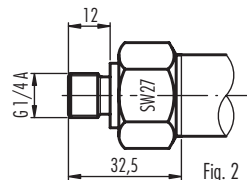


Fig. 2

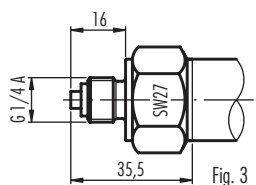


Fig. 3

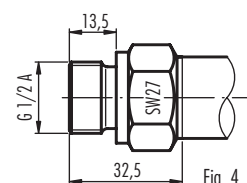


Fig. 4

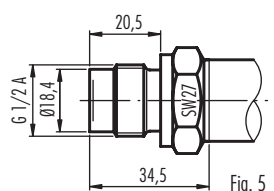


Fig. 5

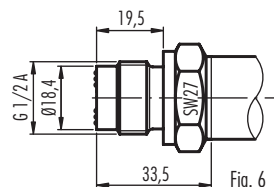


Fig. 6

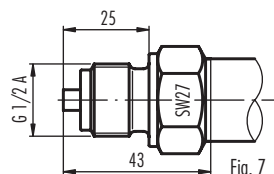


Fig. 7

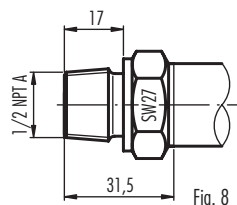
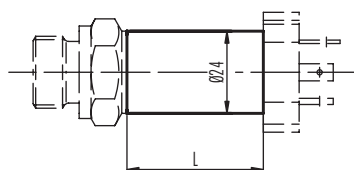


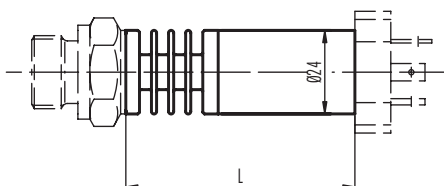
Fig. 8

Variant for medium temperature of up to 100°C



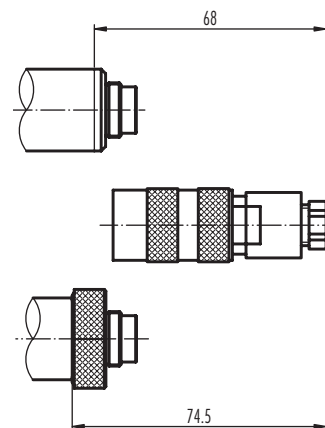
L = 94 mm, with lightning protection = 195 mm

Variant for medium temperature >100°C up to a max. 150°C

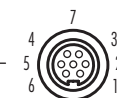


L = 121 mm, with lightning protection = 222 mm

Fig. 10



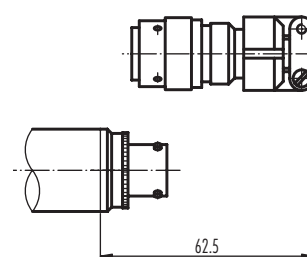
Top view of cable-socket connector



Pin RS485

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

Fig. 11



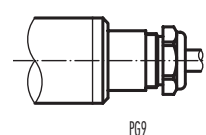
Top view of cable-socket connector



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

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DED036C/10.00.0099

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