Programmable pressure transmitters

PTM

Version: 28.03.2012

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Technical Specifications

Pressure measuring range (bar)

	0.1 ... 0.5	> 0.5 ... 2	> 2 ... 25
Overpressure	3 bar	3 x FS (≥ 3 bar)	3 x FS
Burst pressure	> 200 bar	> 200 bar	> 200 bar
Accuracy, (3), (± % FS)	≤ 0.25	≤ 0.1	≤ 0.1
Thermal shift, (± % FS/°C)			
Zero point 0...70°C	≤ 0.06	≤ 0.03	≤ 0.015
Span 0…70°C	≤ 0.015	≤ 0.015	≤ 0.015
Zero point -25…85°C	≤ 0.08	≤ 0.04	≤ 0.02
Span -25…85°C	≤ 0.02	≤ 0.02	≤ 0.02
Total Error, (4), (5), (± % FS)			
-10...50°C, (typ. / max.)	≤ 0.15 / 0.3 (≤ 200 mbar: 0.3 / 0.6)	≤ 0.15 / 0.3	≤ 0.15 / 0.3
-25...85°C, (typ. / max.)	≤ 0.65 / 0.7 (≤ 200 mbar: 0.65 / 0.8)	≤ 0.65 / 0.7	≤ 0.55 / 0.7
Long term stability, (6)	< 0.5% FS / < 4 mbar	< 0.2% FS / < 4 mbar	< 0.1% FS / < 0.2% FS

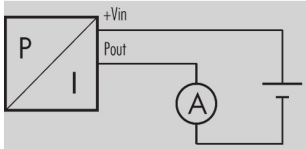
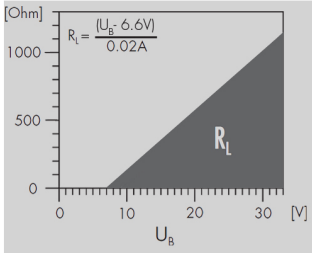
	> 25 ... 600, (1), (2)	> 600 ... 1000, (1)
Overpressure	3 x FS (≤ 850 / ≤ 1500 bar)	1500 bar
Burst pressure	> 850 / ≤ 1500 bar	> 1500 bar
Accuracy, (3), (± % FS)	≤ 0.1	≤ 0.25
Thermal shift, (± % FS/°C)		
Zero point 0...70°C	≤ 0.015	≤ 0.015
Span 0…70°C	≤ 0.015	≤ 0.015
Zero point -25…85°C	≤ 0.02	≤ 0.02
Span -25…85°C	≤ 0.02	≤ 0.02
Total Error, (4), (5), (± % FS)		
-10...50°C, (typ. / max.)	≤ 0.15 / 0.3	n.a.
-25...85°C, (typ. / max.)	≤ 0.55 / 0.7	n.a.
Long term stability, (6)	< 0.1% FS / < 0.2% FS	< 0.1% FS / < 0.2% FS

(1) Titanium available ≤ 400 bar (burst pressure > 550 bar)
(2) Overpressure and burst pressure 1500 bar (stainless steel) optional
(3) Zero based accuracy according to DIN16086, incl. hysteresis and repeatability at ambient temperature
(4) Total error including accuracy and temperature influences at maximum signal span (16 mA)
(5) Active compensated, ≤ 100 bar
(6) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

Temperature range

Operating temperature	-25...85 °C
Process temperature	-40...150 °C
Storage temperature	-25...85 °C

Electrical specifications

	4 ... 20 mA
Resolution	0.025% FS
Output adjustable	
4 mA	-5% FS...105% FS
20 mA	-5% FS...105% FS
Span	25% FS...110% FS (≥ 50 mbar)
Low pass filter	0.1 / 1 / 10 / 30 Hz (standard: 30 Hz)
Power supply	9...33 V DC
Supply influence	< 0.1% FS
Circuit diagram	
Load resistance	
Load resistance influence	< 0.1% FS

Qualifications

	Description	Level	Typical interferences
EN 60068-2-6	Vibration	4g (4...100 Hz / ± 3.2 mmpp)	
EN 60068-2-27	Shock	100g (impulse duration 6 ms)	
EN 55022	Emission, class B	< 30 dBµV/m (0.03...1 GHz)	
EN 61000-4-2	Electrostatic discharge	4 kV contact 8 kV air	
EN 61000-4-3	Irradiated RF	10V/m (0.08...1 GHz)	Radio sets, wireless phones
EN 61000-4-4	Transients (burst)	2 kV	Motors, valves
EN 61000-4-5	Surge	10 kA (8 / 20 µs), (1)	Lightning
EN 61000-4-6	Conducted RF	10 V (0.15...80 MHz)	Frequency converters

(1) Only with optional surge (lightning) protection

Physical specifications

Materials	
Transducer	Stainless steel (316L / 1.4435), titanium (Gr. 2), (1)
Housing	Stainless steel (316L / 1.4404), titanium (Gr. 2)
Seals	Viton (standard), EPDM, Kalrez
Cable	PUR, PTFE, PE

(1) Hastelloy (C-276) on request

Equipment

Overview

10.00.0091	Accessories overview

Interface

101138	PTM - Interface

Software

101224	PC Software V1.50

Additional documents

Manuals

	Article number	Description
10.00.0079	DEB003	Configuration software
10.00.0089	DEB005	User manual

Operating and safety instructions

	Article number
10.00.0137	DMM009

Ordering information

			X.	XXXX.	XXXX.	XX.	XXX
Type							
	PTM	40					
Pressure type							
	Gauge		1				
	Absolute (vacuum)		2				
	Sealed gauge		3				
Pressure measuring range							
	Any pressure measuring ranges between 0...100 mbar and 0...1000 bar available, (1), (2)			XX			
Process connection							
	G 1/4 F, (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. 9)			10			
	1/2 NPT M, (Fig. 8)			19			
	Customized connection available			XX			
Electrical connection							
	DIN 43650, demountable, IP 65, (Fig. 10), (3)				01		
	Binder 723, 5-pin, IP 67, (Fig. 11), (3)				03		
	Binder 723, 7-pin, demountable, IP 67, (Fig. 11), (3)				04		
	MIL C26482, 10-6, IP 40, (Fig. 13), (3)				06		
	PE cable, IP 67, (Fig. 12), (4), (5)				13		
	PUR cable, IP 67, (Fig. 12), (4), (6)				15		
	PTFE cable, IP 67, (Fig. 12), (4)				21		
	PVC cablel, blue, IP 68 (Fig. 12), (9)				14		
	Customized connection available				XX		
Output signal							
	4...20 mA				05		
	4...20 mA with surge (lightning) protection				08		
Accuracy							
	≤ ± 0.25 % FS (≤ 500 mbar / > 600 bar)					0	
	≤ ± 0.1% FS (> 500 mbar...600 bar)					1	
Temperature range							
	0...70 °C compensated (allowed process temperature: 0...80 °C)					0	
	-25...85 °C compensated (allowed process temperature: -25...100 °C)					1	
	-25...85 °C compensated (allowed process temperature: -25...150 °C)					2	
Option 1							
	Throttle, (7)						A
	Special oil filling: ASEOL Food (for food applications)						G
	Special oil filling: Halocarbon (for oxygen applications), (8), (10)						H
Option 2							
	Electronics packed in gel: Gauge pressure						C
	Electronics packed in gel: Absolute pressure						D
Option 3							
	Active compensated (≤ 100 bar)						E

	Version titanium					K
	Seals: Viton (standard)					U
	Seals: EPDM					S
	Seals: Kalrez					T
	Seals: NBR					H
	Aging					Z

(1) Titanium available ≤ 400 bar (burst pressure > 550 bar)
(2) mbar, PSI, kPa etc. available
(3) Cable socket connector not included
(4) Please specify the required cable length and medium
(5) Suitable for drinking water (food approved)
(6) For operating temperature > 50°C, PE or PTFE cable must be used
(7) Only with pressure connection Fig. 2, Fig. 3, Fig. 4, Fig. 7, Fig. 8 and Fig. 9
(8) Maximum pressure measuring range ≤ 270 bar (burst pressure > 400 bar)
(9) ACS Certification
(10) min. Medium temperature -25 ° C

Technical drawings

Pressure connections

Fig. 1

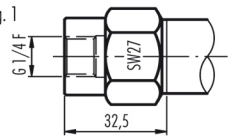


Fig. 2

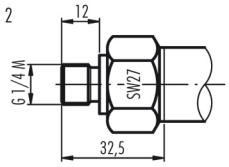


Fig. 3

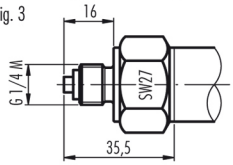


Fig. 4

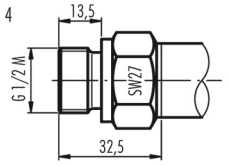


Fig. 5

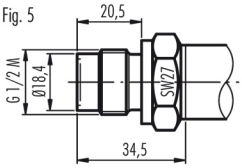


Fig. 6

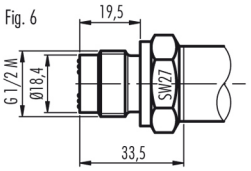


Fig. 7

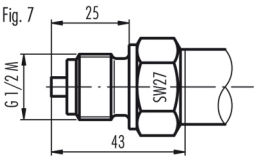


Fig. 8

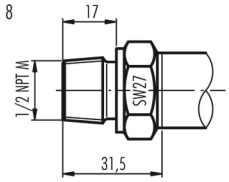
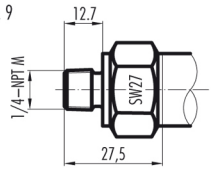
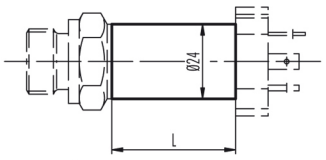


Fig. 9



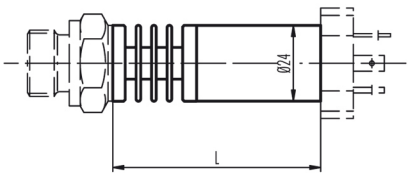
Dimensions

Version for medium temperature up to 100°C



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

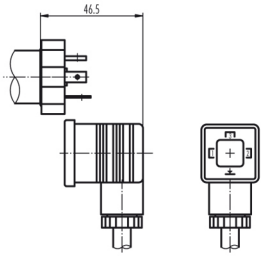
Version for medium temperature >100°C up to a max. 150°C



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

Electrical connections

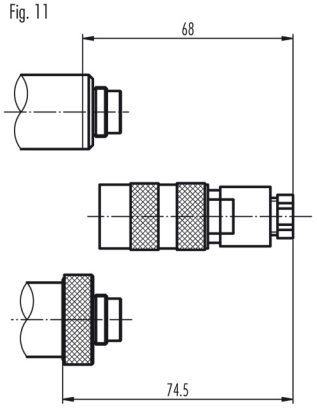
Fig. 10



Top view of cable socket connector

Pin	2-wire
1	+Vin
2	Pout

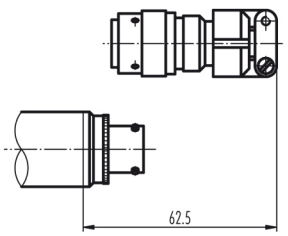
Fig. 11



Top view of cable socket connector

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

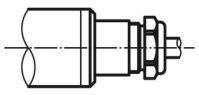
Fig. 13



Top view of cable socket connector

Pin	2-wire
A	+Vin
B	
C	Pout
D	
E	
F	

Fig. 12



PG9

Colour	2-wire
white	+Vin
yellow	Pout

Specifications may change without notice.

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