

Programmable pressure transmitters

PTM



Version: 02.11.2015

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, (4), (\pm % FS)	≤ 0.25	≤ 0.1	≤ 0.1
Thermal shift, (\pm % FS/$^{\circ}$C)			
Zero point 0 ... 70 $^{\circ}$ C	≤ 0.06	≤ 0.03	≤ 0.015
Span 0 ... 70 $^{\circ}$ C	≤ 0.015	≤ 0.015	≤ 0.015
Zero point -25 ... 85 $^{\circ}$ C	≤ 0.08	≤ 0.04	≤ 0.02
Span -25 ... 85 $^{\circ}$ C	≤ 0.02	≤ 0.02	≤ 0.02
Total Error, (5), (6), (\pm % FS)			
-10 ... 50 $^{\circ}$ C, (typ. / max.)	$\leq 0.15 / 0.3$ (≤ 200 mbar: 0.3 / 0.6)	$\leq 0.15 / 0.3$	$\leq 0.15 / 0.3$
-25 ... 85 $^{\circ}$ C, (typ. / max.)	$\leq 0.65 / 0.7$ (≤ 200 mbar: 0.65 / 0.8)	$\leq 0.65 / 0.7$	$\leq 0.55 / 0.7$
Long term stability, (7)	< 0.5% FS / < 4 mbar	< 0.2% FS / < 4 mbar	< 0.1% FS / < 0.2% FS

	> 25 ... 600, (1), (2), (3)	> 600 ... 1000, (1)
Overpressure	3 x FS ($\leq 850 / \leq 1500$ bar)	1500 bar
Burst pressure	> 850 / ≤ 1500 bar	> 1500 bar
Accuracy, (4), (\pm % FS)	≤ 0.1	≤ 0.25
Thermal shift, (\pm % FS/$^{\circ}$C)		
Zero point 0 ... 70 $^{\circ}$ C	≤ 0.015	≤ 0.015
Span 0 ... 70 $^{\circ}$ C	≤ 0.015	≤ 0.015
Zero point -25 ... 85 $^{\circ}$ C	≤ 0.02	≤ 0.02
Span -25 ... 85 $^{\circ}$ C	≤ 0.02	≤ 0.02
Total Error, (5), (6), (\pm % FS)		
-10 ... 50 $^{\circ}$ C, (typ. / max.)	$\leq 0.15 / 0.3$	n.a.
-25 ... 85 $^{\circ}$ C, (typ. / max.)	$\leq 0.55 / 0.7$	n.a.
Long term stability, (7)	< 0.1% FS / < 0.2% FS	< 0.1% FS / < 0.2% FS

(1) Titanium available ≤ 400 bar (burst pressure > 550 bar)

(2) Process connection frontal and flush diaphragm available ≤ 600 bar

(3) Overpressure and burst pressure 1500 bar (stainless steel) optional

(4) Zero based accuracy according to DIN-16086, incl. hysteresis and repeatability at ambient temperature

(5) Total error including accuracy and temperature influences at maximum signal span (16 mA)

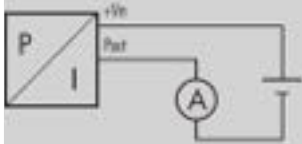
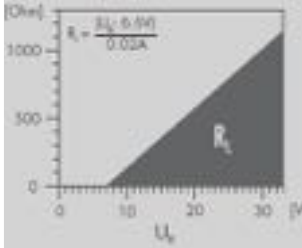
(6) Active compensated, ≤ 100 bar

(7) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

Temperature range

Operating temperature	-25 ... 85 $^{\circ}$ C
Process temperature	-40 ... 150 $^{\circ}$ C
Storage temperature	-25 ... 85 $^{\circ}$ 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 VDC
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, FEP PE

(1) Hastelloy (C-276) on request

Equipment

Overview

10.00.0091	Accessories overview
HART001	Cable Socket Connector

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

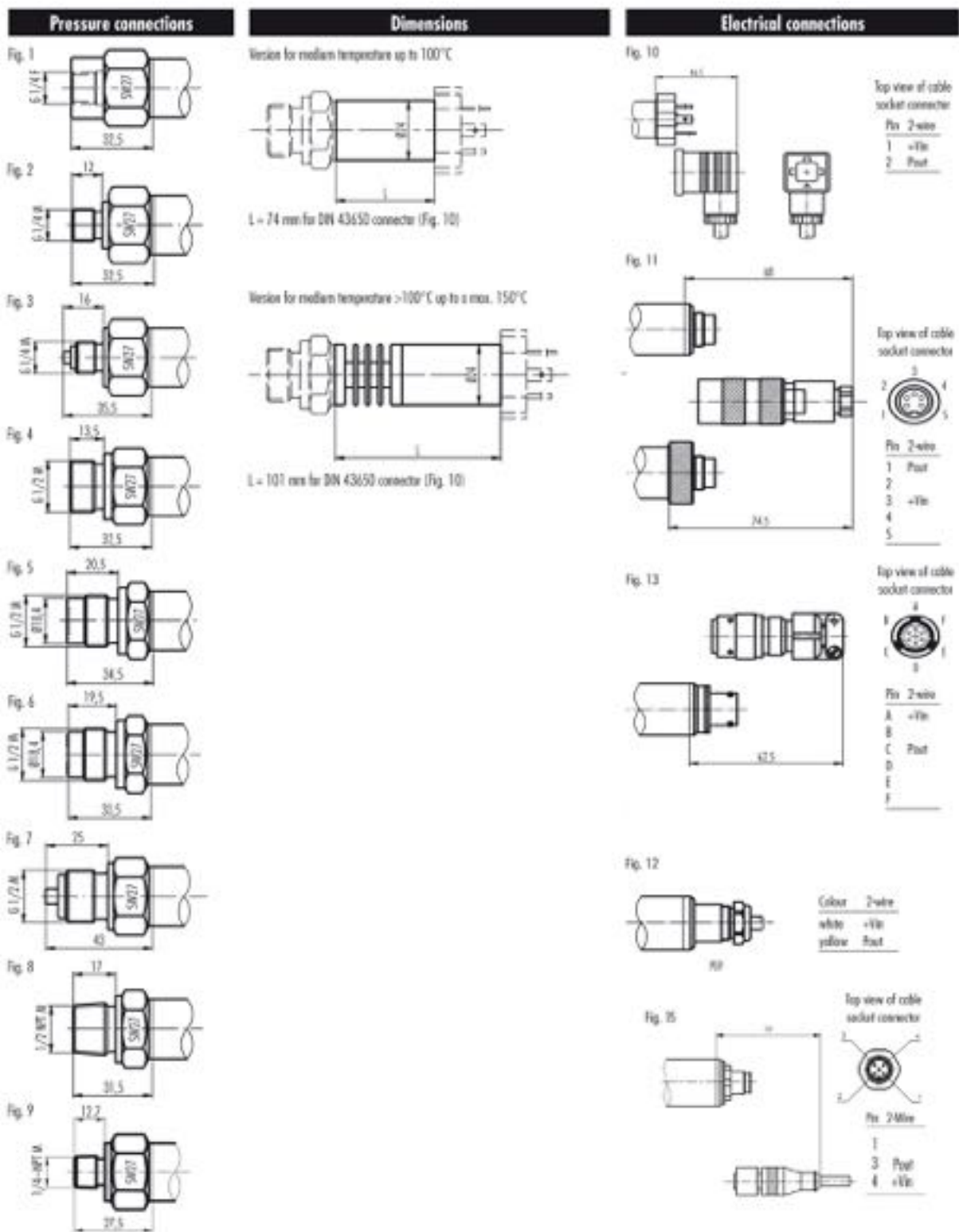
Ordering information

		X. XXXX.	XXXX.	XX.	XXX
Type					
	PTM	40			
Pressure type					
	Gauge	1			
	Absolute (vacuum)	2			
	Sealed gauge	3			
Pressure measuring range					
	100 mbar ... 600 bar	XX			
	> 600 bar	XX			
	Negative ranges, offset, special adjustment	99			
Process connection					
	G 1/4 F (Fig. 1)	00			
	1/4 NPT M (Fig. 9)	10			
	1/2 NPT M (Fig. 8)	19			
	G 1/4 M (Fig. 2)	11			
	G 1/4 flush diaphragm	21			
	G 1/4 M, manometer DIN -16288 (Fig. 3)	12			
	G 1/2 M, (Fig. 4)	13			
	G 1/2 M Hastelloy C276	98			
	G 1/2 M, frontal diaphragm (Fig. 5), (3)	14			
	G 1/2 M, frontal diaphragm Hastelloy C276	37			
	G 1/2 M, flush diaphragm (Fig. 6), (3)	15			
	G 1/2 M, manometer DIN-16288 (Fig. 7)	16			
	G 1/2 M with bore Ø 14 mm	17			
	Customized	99			
Electrical connection					
	DIN-43650, demountable, IP 65 (Fig. 10), (4)	01			
	DIN-43650, with metal threaded part, demountable	66			
	Binder 723, 5 pins, IP 67 (Fig. 11), (4)	03			
	Binder 723, 7 pins, demountable, IP 67 (Fig. 11), (4)	04			
	MIL C26482, 10-6, IP 40 (Fig. 13), (4)	06			
	Lumberg RSF4, 4 pins (Fig. 15), (4)	07			
	PE cable, black, IP 67 (Fig. 12), (5), (6)	13			
	PUR cable, black, IP 67 (Fig. 12), (5), (7)	15			
	PUR cable, black, with submersible back end IP68	24			
	FEP, black, IP 67 (Fig. 12), (5)	21			
	Customized	99			
Output signal					
	4 ... 20 mA	05			
	4 ... 20 mA with surge overvoltage protection	08			
Accuracy					
	≤ ± 0.25 % FS (< 500 mbar / > 600 bar)			1	
	≤ ± 0.1% FS (≥ 500 mbar ... 600 bar)			2	
Temperature range					
	0 ... 70°C compensated (allowed process temperature: -25 ... 100°C)			0	
	25 ... 100°C compensated (allowed process temperature: -25 ... 100°C)			7	
	-25 ... 85°C compensated (allowed process temperature: -25 ... 100°C)			1	
	-25 ... 85°C compensated (allowed process temperature: -25 ... 150°C)			2	

	20 ... 100°C compensated (allowed process temperature: -25 ... 150°C) with cooling fins				6
	Customized				9
Option 1					
	Throttle, (8)				A
	Special oil filling: Anderol Food (for food applications)				G
	Special oil filling: AS100 (suitable for meda temp. -55...150°C)				J
	Special oil filling: PAO4 (Silikone free)				Q
Option 2					
	Electronics packed in gel: Gauge pressure				C
	Electronics packed in gel: Absolute pressure				D
Option 3					
	Active compensated (≥ 100 mbar ≤ 100 bar)				E
	Version titanium				K
	Seals: Viton (standard)				U
	Seals: EPDM				S
	Seals: Kalrez				T
	Seals: NBR (ACS) (9)				H

- (1) Titanium available ≤ 400 bar (burst pressure > 550 bar)
- (2) mbar, PSI, kPa etc. available
- (3) Process connection available ≤ 600 bar
- (4) Cable socket connector not included
- (5) Please specify the required cable length and medium
- (6) Suitable for drinking water (food approved)
- (7) For operating temperature $> 50^\circ\text{C}$, PE or FEP cable must be used
- (8) Only with pressure connection Fig. 2, Fig. 3, Fig. 4, Fig. 7, Fig. 8 and Fig. 9
- (10) ACS Certification

Technical drawings



Specifications may change without notice

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