

Programmable intrinsically safe pressure transmitters

PTM/Ex



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), ($\pm$ % FS)	≤ 0.25	≤ 0.1	≤ 0.1
Thermal shift, ($\pm$ % FS/°C)			
Zero point 0...70°C	≤ 0.06	≤ 0.03	≤ 0.015
Zero point -25...85°C	≤ 0.08	≤ 0.04	≤ 0.02
Span 0...70°C	≤ 0.015	≤ 0.015	≤ 0.015
Span -25...85°C	≤ 0.02	≤ 0.02	≤ 0.02
Total Error, (4), (5), ($\pm$ % FS)			
-10...50°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°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, (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 ($\leq 850 / \leq 1500$ bar)	1500 bar
Burst pressure	> 850 / ≤ 1500 bar	> 1500 bar
Accuracy, (3), ($\pm$ % FS)	≤ 0.1	≤ 0.25
Thermal shift, ($\pm$ % FS/°C)		
Zero point 0...70°C	≤ 0.015	≤ 0.015
Zero point -25...85°C	≤ 0.02	≤ 0.02
Span 0...70°C	≤ 0.015	≤ 0.015
Span -25...85°C	≤ 0.02	≤ 0.02
Total Error, (4), (5), ($\pm$ % FS)		
-10...50°C, (typ. / max.)	$\leq 0.15 / 0.3$	n.a.
-25...85°C, (typ. / max.)	$\leq 0.55 / 0.7$	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...28 V DC
Supply influence	< 0.1% FS
Circuit diagram	
Load resistance	
Load influence	< 0.1% FS

ATEX Approval

Certificate, (1)	SEV 08 ATEX 0142		
Gas	II 1G Ex ia IIC T3 / T4 / T6	EN 60079-0 / -11 / -26	
Dust	II 1D Ex iaD 20 IP6x Tx°C	EN 61241-0 / -11	
Temperature class, (2)	T6	T4	T3
Ambient temperature	-25...55 °C	-25...85 °C	-25...85 °C
Process temperature	-25...55 °C	-25...100 °C	-25...150 °C
Maximum values of the connection circuit	28 V / 93 mA / 0.65 W		

(1) For detailed Ex specifications see certificate and operating an safety instructions

(2) Without any information about temperature class the transmitter will be delivered for T4

GL Approval

Certificate	60332-09 HH
Field of application	D, F, EMC1

Additional approvals

DNV	A-11280
ABS	09-HG436727/1-PDA

Qualifications

	Description	Level	Typical interferences
EN 60068-2-6	Vibration	4g (4...100 Hz / $\pm$ 3.2 mmpp)	
EN 60068-2-27	Shock	100g (impulse duration 6 ms)	
EN 55022	Emission, class B	< 30 dB μ V/m (0.03...1 GHz)	
EN 61000-4-2	Electrostatic discharge	8 kV contact 15 kV air	
EN 61000-4-3	Irradiated RF	10V/m (0.08...2.7 GHz, 3s)	Radio sets, wireless phones
EN 61000-4-4	Transients (burst)	4 kV	Motors, valves
EN 61000-4-5	Surge	Line-Line: 0.5 kV/42 Ω Line-Earth: 1 kV/42 Ω	Lightning
EN 61000-4-6	Conducted RF	10 V (0.15...80 MHz, 3 s)	Frequency converters

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

(1) Hastelloy (C-276) on request

Equipment

Overview

10.00.0091	Accessories overview

Interface

102442	PTM/Ex - 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
10.00.0271	DMM023

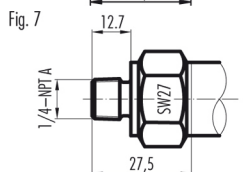
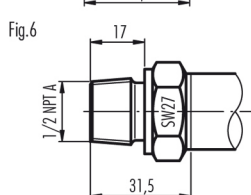
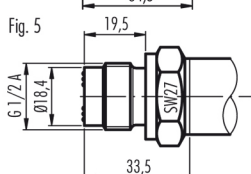
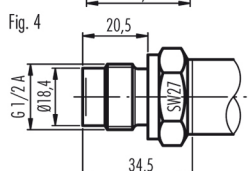
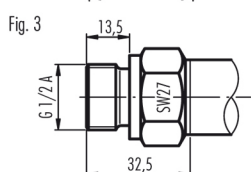
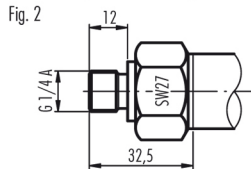
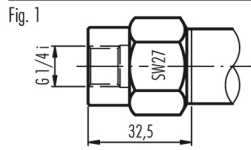
Ordering information

		X. XXXX. XXXX. XX. XXX			
Type					
	PTM/Ex	47			
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 1/2 M, (Fig. 3)	13			
	G 1/2 M, frontal diaphragm, (Fig. 4)	14			
	G 1/2 M, flush diaphragm, (Fig. 5)	15			
	1/2 NPT M, (Fig. 6)	10			
	1/4 NPT M, (Fig. 7)	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		
	PUR cable, IP 67, (Fig. 12), (4), (5)		17		
	PTFE cable, IP 67, (Fig. 12), (4)		22		
	Customized connection available		XX		
Output signal					
	4...20 mA		05		
Accuracy					
	$\leq \pm 0.25\%$ FS (≤ 500 mbar / > 600 bar)			1	
	$\leq \pm 0.1\%$ FS (> 500 mbar...600 bar)			2	
Temperature range					
	T6 (Ta: -25...55 °C) 0...70 °C compensated (allowed process temperature: -25...55°C)			3	
	T4 (Ta: -25...85 °C) -25...85 °C compensated (allowed process temperature: -25...100°C)			1	
	T3 (Ta: -25...85 °C) -25...85 °C compensated (allowed process temperature: -25...150°C)			2	
Option 1					
	Throttle, (6)				A
	Special oil filling: ASEOL Food (for food applications)				G
	Special oil filling: Halocarbon (for oxygen applications), (7), (8)				H
Option 2					
Option 3					
	Active compensated (≤ 100 bar)				E
	Version titanium				K
	Seals: Viton (standard)				U
	Seals: EPDM				S
	Seals: Kalrez				T
	Ageing				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) For operating temperature $> 50^{\circ}\text{C}$, PTFE cable must be used
- (6) Only with pressure connection Fig. 2, Fig. 3, Fig. 6 and Fig. 7
- (7) Maximum pressure measuring range ≤ 270 bar (burst pressure > 400 bar)
- (8) min. Medium temperature -25°C

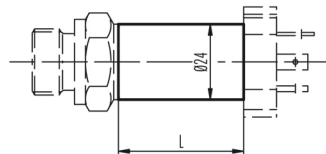
Technical drawings

Pressure connections



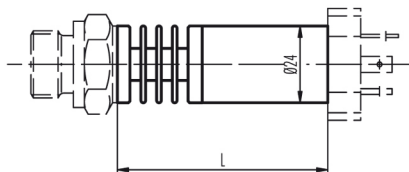
Dimensions

Version for medium temperature up to 100°C



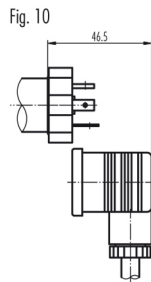
L = 94 mm Connector DIN 43650

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

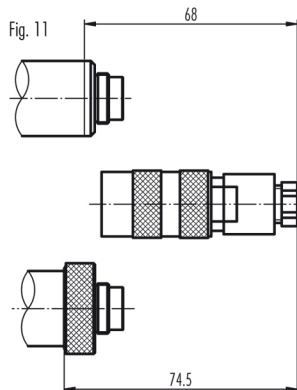


L = 121 mm Connector DIN 43650

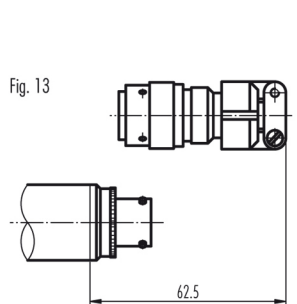
Electrical connections



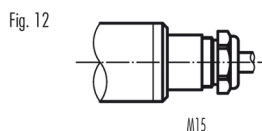
Cable socket connector	
Pin	2 wire
1	+Vin
2	Pout
Earth	EP



Cable socket connector	
Pin	2 wire
1	Pout
3	+Vin
5	EP



Cable socket connector	
Pin	2 wire
A	+Vin
C	Pout
F	EP



Colour	2 wire
white	+Vin
yellow	Pout
grey	EP

Specifications may change without notice.

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