SensorsONE
Measurement Instrumentation Products

Pressure Transmitter - ATEX certified

TM/Ex - Passive Transmitter

CUSTOMER BENEFITS

- Certificate: ATEX & EAC
- Unreinforced output signal
- Fast customization thanks to configurable product design
- Short response times suitable for dynamic pressure measurements

Technical Specifications

PRESSURE MEASURING RANGE (BAR)

	0.1 ... 0.5, (1)	> 0.5 ... 2	> 2 ... 25
Overpressure	3 bar	3 x FS (≥ 3 bar)	3 x FS
Burst pressure, (5)	> 200 bar	> 200 bar	> 200 bar
Accuracy, (6) (± % FS)	≤ 0.5	≤ 0.5 / ≤ 0.25	≤ 0.5 / ≤ 0.25
Thermal shift, (± % 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
Response time,	< 0.1ms / 10...90% FS	< 0.1ms / 10...90% FS	< 0.1ms / 10...90% FS
Long term stability, (7)	< 0.5% FS / < 4 mbar	< 0.2% FS / < 4 mbar	< 0.1% FS / < 0.2% FS

	> 25 ... 600, (2), (4)	> 600 ... 1000, (3)
Overpressure	3 x FS (≤ 850 / ≤ 1500 bar)	1500 bar
Burst pressure, (5)	> 850 / ≤ 1500 bar	> 1500 bar
Accuracy, (6) (± % FS)	≤ 0.5 / ≤ 0.25	≤ 1 / ≤ 0.5
Thermal shift, (± % 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
Response time,	< 0.1ms / 10...90% FS	< 0.1ms / 10...90% FS
Long term stability, (7)	< 0.1% FS / < 0.2% FS	< 0.1% FS / < 0.2% FS

(1) 50 mbar on request
(2) Titanium available ≤ 400 bar (burst pressure > 550 bar)
(3) Process connection frontal and flush diaphragm available ≤ 600 bar
(4) Overpressure and burst pressure 1500 bar (stainless steel) optional
(5) Transducer
(6) Zero based accuracy according to DIN-16086, incl. hysteresis and repeatability at ambient temperature
(7) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

TEMPERATURE RANGE

Operating temperature	-40 ... 125 °C
Process temperatur	-40 ... 150°C
Storage temperatur	-40 ... 125 °C

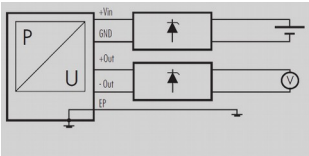
TYPICAL OUTPUT SIGNAL (BAR)

	≤ 0.25	> 0.25...0.6	> 0.6...1
Output signal, (1), (mV)	15	25	35

	> 1...2.5	> 2.5
Output signal, (1), (mV)	50	100

(1) At nominal pressure, 10 V DC

ELECTRICAL SPECIFICATIONS

Circuit diagram	
Input impedance	> 10 kΩ
Bridge resistance, (typ.)	3 kΩ
Supply voltage, (typ./max.)	10 / 15 V DC

ATEX APPROVAL

Certificate, (1)	SEV 04 ATEX 0149		
Gas	II 1G Ex ia IIC T3 ... T6	EN 60079-0 / -11 / -26	
Dust	II 1D Ex iaD 20 I T135°C...T90°C IP6x	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 ... 110°C	-25 ... 150°C
Maximum values of the connection circuit	20 V / 300 mA / 1.2 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

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

(1) Hastelloy (C-276) on request

Equipment

OVERVIEW

10.00.0091	Accessories overview

Additional documents

OPERATING AND SAFETY INSTRUCTIONS

	Article number
10.88.0369	DMM030

Ordering information

			X.	XXXX.	XXXX.	XX.	XXX
Type							
	TM/Ex	20					
Pressure type							
	Gauge		1				
	Absolute (vacuum)		2				
	Sealed gauge		3				
Pressure measuring range							
	50 mbar ... <100 mbar			XX			
	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 M, flush diaphragm, (4)			21			
	G 1/4 M, manometer DIN 16288, (Fig. 3)			12			
	G 1/2 M, (Fig. 4)			13			
	G 1/2 M Hastelloy C-276			41			
	G 1/2 M, frontal diaphragm, (Fig. 5), (4)			14			
	G 1/2 M, frontal diaphragm in Hastelloy C-276			37			
	G 1/2 M, flush diaphragm, (Fig. 6), (4)			15			
	G 1/2 M, manometer DIN 16288, (Fig. 7)			16			
	G 1/2 with bore Ø 14 mm			17			
	Customized connection available			99			
Electrical connection							
	DIN-43650 with metal threaded part, demountable, IP 65 (Fig. 10), (1)				01		
	M16 (Binder 723), 5-pin, IP 67, (Fig. 11), (1)				03		
	M16 (Binder 723), 5-pin, demountable, IP 67, (Fig. 12), (1)				43		
	MIL C26482, 10-6, IP 40, (Fig. 13), (1)				06		
	PUR cable, blue, IP 67, (Fig. 14)				17		
	FEP cable, blue, IP 67, (Fig. 14)				22		
	Customized connection available				99		
Output signal							
	0 ... 15 mV				10		
	0 ... 25 mV				11		
	0 ... 35 mV				12		
	0 ... 50 mV				13		
	0 ... 100 mV				14		
	0 ... XXX mV (customized)				99		
Accuracy							
	≤ 600 bar ≤ ± 0.5 % FS					0	
	≤ 600 bar ≤ ± 0.25 % FS (on request)					1	
	> 600 bar ≤ ± 1 % FS					5	
	> 600 bar ≤ ± 0.5 % FS					0	

Temperature range						
	T6 (Ta: -25 ... 55°C) 0 ... 70°C compensated (allowed process temperature: -25 ... 55°C)				0	
	T4 (Ta: -25 ... 85°C) -25 ... 85°C compensated (allowed process temperature: -25 ... 110°C)				1	
	T3 (Ta: -25 ... 85°C) -25 ... 85°C compensated (allowed process temperature: -25 ... 150°C)				2	
Option 1						
	Throttle, (9)					A
	Special oil filling: Anderol Food (for food applications)					G
	Special oil filling: AS100 (suitable for media. temp -55...150°C)					J
	Special oil filling: PAO4 (silicone free)					Q
	Process connection elastomerfree					N
	Process connection welded					V
Option 2						
Option 3						
	Version titanium					K
	Seals: Viton (Standard)					U
	Seals: EPDM					S
	Seals: Kalrez (Industry)					T
	TD with 100 µm diaphragm (for hydrogen applications, Pn > 25 bar)					Z

(1) Cable socket connector not included

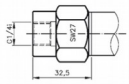
(4) Process connection available ≤ 600 bar

(9) Only with process connection Fig. 2, Fig. 3, Fig. 4, Fig. 7 and Fig. 8

Technical drawings

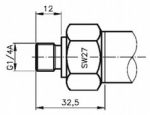
Pressure Connections

Fig. 1



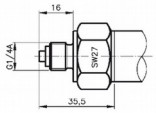
L = 27.5 (ND)
L = 32.5 (HD)

Fig. 2



L = 27.5 (ND)
L = 32.5 (HD)

Fig. 3



L = 30.5 (ND)
L = 35.5 (HD)

Fig. 4

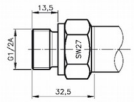
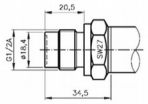
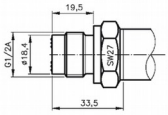


Fig. 5



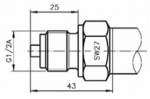
L = 27.5 (ND)
L = 32.5 (HD)

Fig. 6



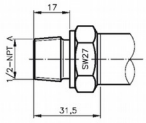
L = 34.5 (ND+HD)

Fig. 7



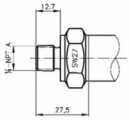
L = 33.5 (ND+HD)

Fig. 8



L = 38 (ND)
L = 43 (HD)

Fig. 9



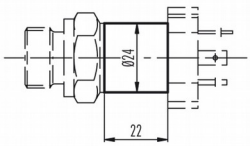
L = 27.5 (ND)
L = 32.5 (HD)

L = 31.5 (ND)
L = 36.5 (HD)

ND = low pressure ≤ 30 bar
HD = high pressure > 30 bar

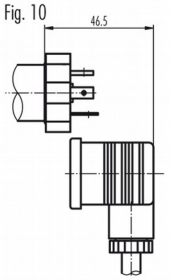
Dimensions

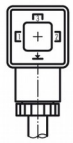
Version for media temperature up to 150°C



Electrical Connections

Fig. 10





Pin	TM
1	+Vin
2	+Out
3	GND
Earth	- Out

Fig. 11

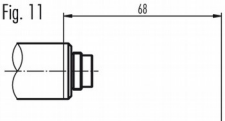
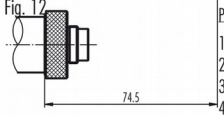
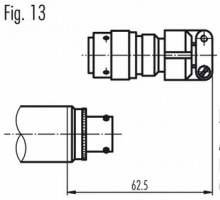


Fig. 12



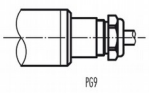
Pin	TM	TM/Ex
1	+Out	+Out
2	- Out	- Out
3	+Vin	+Vin
4	GND	GND
5		EP

Fig. 13



Pin	TM	TM/Ex
A	+Vin	+Vin
B	GND	GND
C	+Out	+Out
D	- Out	- Out
E		EP

Fig. 14



Colour	TM	TM/Ex
white	+Vin	+Vin
yellow	GND	GND
brown	+Out	+Out
green	- Out	- Out
gray		EP