

Intrinsically safe pressure transmitters

ATM/Ex



Version: 02.11.2015

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	> 200 bar	> 200 bar	> 200 bar
Accuracy, (5), (\pm % FS)	$\leq 0.5 / \leq 0.25$	$\leq 0.5 / \leq 0.25 / \leq 0.1$	$\leq 0.5 / \leq 0.25 / \leq 0.1$
Thermal shift, (\pm % FS/$^{\circ}$C)			
Zero point 0 ... 70 $^{\circ}$ C	≤ 0.06	≤ 0.03	≤ 0.015
Zero point -25 ... 85 $^{\circ}$ C	≤ 0.08	≤ 0.04	≤ 0.02
Span 0 ... 70 $^{\circ}$ C	≤ 0.015	≤ 0.015	≤ 0.015
Span -25 ... 85 $^{\circ}$ C	≤ 0.02	≤ 0.02	≤ 0.02
Response time, (typ.)	< 1ms/10 ... 90%	< 1ms / 10 ... 90% FS	< 1ms / 10 ... 90% FS
Long term stability, (6)	< 0.5% FS / < 4 mbar	< 0.2% FS / < 4 mbar	< 0.1% FS / < 0.2% FS

	> 25 ... 600, (2), (3), (4)	> 600 ... 1000, (2)
Overpressure	3 x FS ($\leq 850 / \leq 1500$ bar)	1500 bar
Burst pressure	> 850 / ≤ 1500 bar	> 1500 bar
Accuracy, (5), (\pm % FS)	$\leq 0.5 / \leq 0.25 / \leq 0.1$	$\leq 1 / \leq 0.5 / \leq 0.25$
Thermal shift, (\pm % FS/$^{\circ}$C)		
Zero point 0 ... 70 $^{\circ}$ C	≤ 0.015	≤ 0.015
Zero point -25 ... 85 $^{\circ}$ C	≤ 0.02	≤ 0.02
Span 0 ... 70 $^{\circ}$ C	≤ 0.015	≤ 0.015
Span -25 ... 85 $^{\circ}$ C	≤ 0.02	≤ 0.02
Response time, (typ.)	< 1ms / 10 ... 90% FS	< 1ms / 10 ... 90% FS
Long term stability, (6)	< 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) Zero based accuracy according to DIN-16086, incl. hysteresis and repeatability at ambient temperature

(6) 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 temperatur	-40 ... 150 $^{\circ}$ C
Storage temperatur	-25 ... 85 $^{\circ}$ C

Electrical specifications

	4 ... 20 mA
Power supply	10 ... 30 VDC
Supply influence	< 0.1% FS
Circuit diagram	
Load resistance	
Load influence	< 0.1% FS

ATEX Approval

Certificate, (1)	SEV 11 ATEX 0142		
Gas	II 1G Ex ia IIC T3 ... T6	EN 60079-0 / -11 / -26	
Dust	II 1D Ex iaD 20 IP6x T125°C ... T80°C	EN 61241-0 / -11	
Mining	I M1 Ex ia I	EN 50303	
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	30 V / 100 mA / 1 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	40868-01 HH
Field of application	C, EMC1

Additional approvals

FM	3027351
CSA	2012692

Qualifications

	Description	Level	Typical interferences
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)	2 kV	Motors, valves
EN 61000-4-5	Surge	10 kA (8 / 20 µs), (1)	Overvoltage
EN 61000-4-6	Conducted RF	10 V (0.15 ... 80 MHz, 3 s)	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

(1) Hastelloy (C-276) on request

Equipment

Cable socket connector

HART001	Cable Socket Connector
HART058	Cable socket connector, DIN 43650, micro

Overview

10.00.0091	Accessories overview

Additional documents

Operating and safety instructions

	Article number
10.88.0092	DMM029

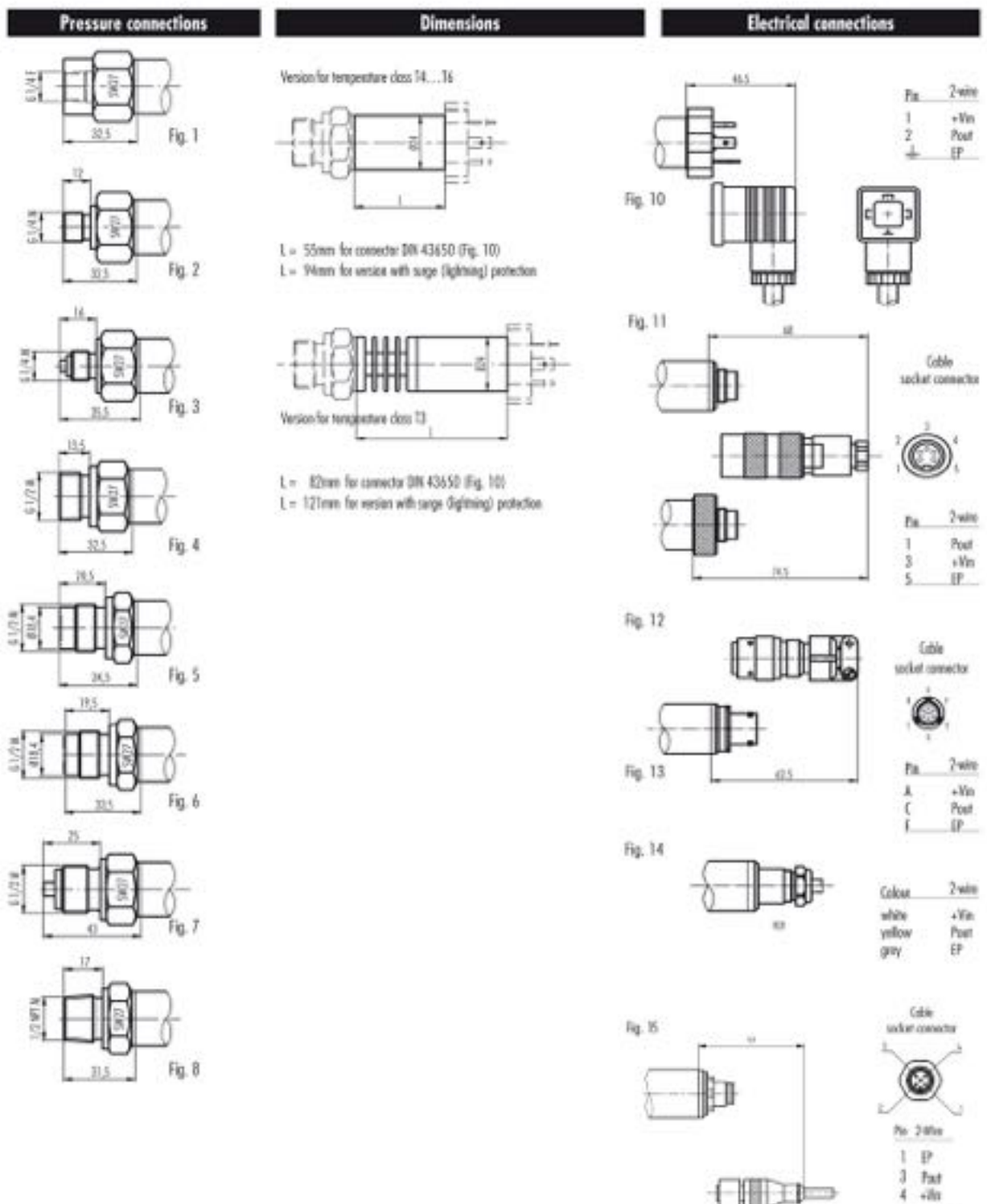
Ordering information

		X. XXXX.	XXXX.	XX.	XXX
Type					
	ATM/Ex	33			
Pressure type					
	Gauge	1			
	Absolute (vacuum)	2			
	Sealed gauge	3			
Pressure measuring range					
	100 mbar ... 600 bar (1), (3)	XX			
	> 600 bar	XX			
	Negative ranges, offset, special adjustment	99			
Process connection					
	G 1/4 F (Fig. 1)	00			
	1/4 NPT M	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 C-276	98			
	G 1/2 M, frontal diaphragm (Fig. 5), (4)	14			
	G 1/2 male, frontal diaphragm 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 male with bore Ø 14 mm	17			
	Customized	99			
Electrical connection					
	DIN-43650, demountable, IP 65 (Fig. 10), (5)		01		
	DIN-43650 with metal threaded part, demountable, IP 65		66		
	Binder 723, 5 pins, IP 67 (Fig. 11), (5)		03		
	Binder 723, 5 pins, demountable, IP 67, (Fig. 12), (5)		43		
	MIL C26482, 10-6, IP 40 (Fig. 13), (5)		06		
	Lumberg RSF4, 4 pins (Fig. 15), (5)		07		
	PUR cable, blue, IP 67 (Fig. 14), (6), (7)		17		
	PUR cable, blue, with submersible back end IP 68		36		
	FEP cable, blue, IP 67 (Fig. 14), (6)		22		
	Customized		99		
Output signal					
	4 ... 20 mA		05		
	4 ... 20 mA with surge protection		08		
Accuracy					
	≤ 600 bar ≤ ± 0.5 % FS			0	
	≤ 600 bar ≤ ± 0.25 % FS			1	
	≤ 600 bar ≤ ± 0.1 % FS			2	
	> 600 bar ≤ ± 1 % FS			5	
	> 600 bar ≤ ± 0.5 % FS			0	
	> 600 bar ≤ ± 0.25 % FS			1	
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 ... 100°C)			1	

T3 (Ta: -25 ... 85°C) -25 ... 85°C compensated (allowed process temperature: -25 ... 150°C)				2	
Option 1					
Throttle, (8)					A
Special oil filling: Anderol Food (for food applications)					G
Special oil filling: AS100					J
Special oil filling: PAO4 (silicone free)					Q
Pressure connection elastomerfree					N
Pressure connection welded					V
Option 2					
Option 3					
Version titanium					K
Seals: Viton (standard)					U
Seals: EPDM					S
Seals: Kalrez (Industry)					T

- (1) 50 mbar on request
- (2) Titanium available \leq 400 bar (burst pressure > 550 bar)
- (3) mbar, PSI, kPa etc. available
- (4) Process connection available \leq 600 bar
- (5) Cable socket connector not included
- (6) Please specify the required cable length and medium
- (7) For operating temperature > 50°C, FEP cable must be used
- (8) Only with pressure connection Fig. 2, Fig. 3, Fig. 4, Fig. 7 and Fig. 8

Technical drawings



Specifications may change without notice

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