

## Intrinsically safe pressure transmitters

# ATM/IS

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Version: 02.11.2015

# Technical Specifications

## Pressure measuring range (bar)

	0.1 ... 0.5, (1)	> 0.5 ... 2	> 2 ... 25
<b>Overpressure</b>	3 bar	3 x FS ( $\geq 3$ bar)	3 x FS
<b>Burst pressure</b>	> 200 bar	> 200 bar	> 200 bar
<b>Accuracy, (5), (<math>\pm</math> % FS)</b>	$\leq 0.5 / \leq 0.25$	$\leq 0.5 / \leq 0.25 / \leq 0.1$	$\leq 0.5 / \leq 0.25 / \leq 0.1$
<b>Thermal shift, (<math>\pm</math> % FS/<math>^{\circ}</math>C)</b>			
Zero point 0 ... 70 $^{\circ}$ C	$\leq 0.06$	$\leq 0.03$	$\leq 0.015$
Zero point -25 ... 85 $^{\circ}$ C	$\leq 0.08$	$\leq 0.04$	$\leq 0.02$
Span 0 ... 70 $^{\circ}$ C	$\leq 0.015$	$\leq 0.015$	$\leq 0.015$
Span -25 ... 85 $^{\circ}$ C	$\leq 0.02$	$\leq 0.02$	$\leq 0.02$
<b>Response time, (typ.)</b>	< 1ms/10 ... 90%	< 1ms / 10 ... 90% FS	< 1ms / 10 ... 90% FS
<b>Long term stability, (6)</b>	< 0.5% FS / < 4 mbar	< 0.2% FS / < 4 mbar	< 0.1% FS / < 0.2% FS

	> 25 ... 600, (2), (3), (4)	> 600 ... 1000, (2)
<b>Overpressure</b>	3 x FS ( $\leq 850 / \leq 1500$ bar)	1500 bar
<b>Burst pressure</b>	> 850 / $\leq 1500$ bar	> 1500 bar
<b>Accuracy, (5), (<math>\pm</math> % FS)</b>	$\leq 0.5 / \leq 0.25 / \leq 0.1$	$\leq 1 / \leq 0.5 / \leq 0.25$
<b>Thermal shift, (<math>\pm</math> % FS/<math>^{\circ}</math>C)</b>		
Zero point 0 ... 70 $^{\circ}$ C	$\leq 0.015$	$\leq 0.015$
Zero point -25 ... 85 $^{\circ}$ C	$\leq 0.02$	$\leq 0.02$
Span 0 ... 70 $^{\circ}$ C	$\leq 0.015$	$\leq 0.015$
Span -25 ... 85 $^{\circ}$ C	$\leq 0.02$	$\leq 0.02$
<b>Response time, (typ.)</b>	< 1ms / 10 ... 90% FS	< 1ms / 10 ... 90% FS
<b>Long term stability, (6)</b>	< 0.1% FS / < 0.2% FS	< 0.1% FS / < 0.2% FS

(1) 50 mbar on request

(2) Titanium available  $\leq 400$  bar (burst pressure > 550 bar)

(3) Process connection frontal and flush diaphragm available  $\leq 600$  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

<b>Operating temperature</b>	-25 ... 85 $^{\circ}$ C
<b>Process temperatur</b>	-40 ... 150 $^{\circ}$ C
<b>Storage temperatur</b>	-25 ... 85 $^{\circ}$ C

## Electrical specifications

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

## ATEX Approval

<b>Certificate, (1)</b>	SEV 11 ATEX 0142		
<b>Gas</b>	II 1G Ex ia IIC T3 ... T6	EN 60079-0 / -11 / -26	
<b>Dust</b>	II 1D Ex iaD 20 IP6x T125°C ... T80°C	EN 61241-0 / -11	
<b>Mining</b>	I M1 Ex ia I	EN 50303	
<b>Temperature class, (2)</b>	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
<b>Maximum values of the connection circuit</b>	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

<b>Certificate</b>	40868-01 HH
<b>Field of application</b>	C, EMC1

## Additional approvals

<b>FM</b>	3027351
<b>CSA</b>	2012692

## Qualifications

	Description	Level	Typical interferences
<b>EN 61000-4-2</b>	Electrostatic discharge	8 kV contact 15 kV air	
<b>EN 61000-4-3</b>	Irradiated RF	10V/m (0.08 ... 2.7 GHz, 3s)	Radio sets, wireless phones
<b>EN 61000-4-4</b>	Transients (burst)	2 kV	Motors, valves
<b>EN 61000-4-5</b>	Surge	10 kA (8 / 20 µs), (1)	Overvoltage
<b>EN 61000-4-6</b>	Conducted RF	10 V (0.15 ... 80 MHz, 3 s)	Frequency converters

(1) Only with optional surge (lightning) protection

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## Physical specifications

<b>Materials</b>	
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

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### Cable socket connector

<b>HART001</b>	Cable Socket Connector
<b>HART058</b>	Cable socket connector, DIN 43650, micro

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### Overview

<b>10.00.0091</b>	Accessories overview

## Additional documents

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### Operating and safety instructions

	Article number
<b>10.88.0092</b>	DMM029

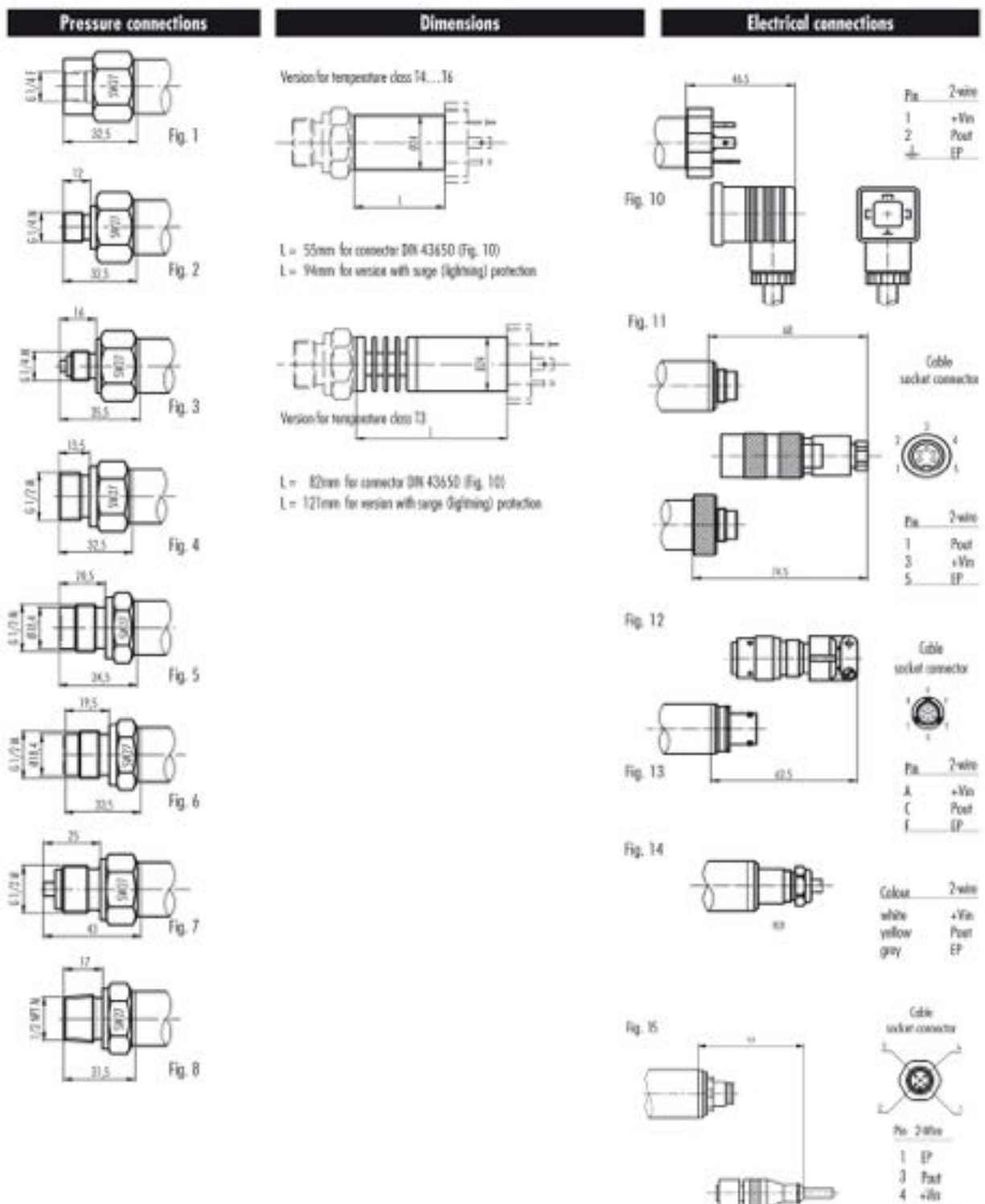
## Ordering information

		X. XXXX.	XXXX.	XX.	XXX
<b>Type</b>					
	ATM/IS	33			
<b>Pressure type</b>					
	Gauge	1			
	Absolute (vacuum)	2			
	Sealed gauge	3			
<b>Pressure measuring range</b>					
	100 mbar ... 600 bar (1), (3)	XX			
	> 600 bar	XX			
	Negative ranges, offset, special adjustment	99			
<b>Process connection</b>					
	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			
<b>Electrical connection</b>					
	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		
<b>Output signal</b>					
	4 ... 20 mA		05		
	4 ... 20 mA with surge protection		08		
<b>Accuracy</b>					
	≤ 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	
<b>Temperature range</b>					
	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	
<b>Option 1</b>					
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
<b>Option 2</b>					
<b>Option 3</b>					
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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