

Pressure Transmitter - FM / FM-C certified

ATM/IS - Analog Pressure Transmitter



CUSTOMER BENEFITS

- Certificate: FM & FM-C
- Fast customization thanks to configurable product design
- Demountable electrical connector option allow adjustment of zero and span setting
- Compact design requires minimal space
- 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) ($\pm$ % 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, (7)	< 0.5% FS / < 4 mbar	< 0.2% FS / < 4 mbar	< 0.1% FS / < 0.2% FS

	> 25 ... 600, (2), (3), (4)	> 600 ... 690, (2), (8)
Overpressure	3 x FS ($\leq 850 / \leq 1500$ bar)	1500 bar
Burst pressure, (5)	> 850 / ≤ 1500 bar	> 1500 bar
Accuracy, (6) ($\pm$ % 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, (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

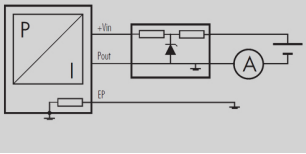
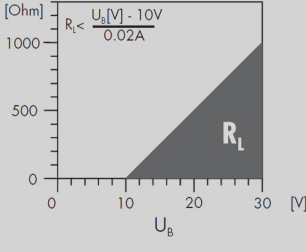
(7) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

(8) Maximum pressure allowed by FM/FC certification body 690bar

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

APPROVAL

FM	3027351
FM-C	3027351C

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, (1)	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

Accessories

CABLE SOCKET CONNECTOR

HART001	Cable Socket Connector DIN 43650
HART002	Cable socket M16, Binder 723, IP67, 5-pins
HART006	RSF50, IP67, 2m, angled, for absolute and sealed gauge
HART009	M16 (Binder 723), IP 67, 12 -pins
HART012	MIL C26482, 10-6, IP40, 6- pins
HART018	M12 (Lumberg RSF 4/5), 5- pins
HART026	M16 (Binder 723), IP67, 7- pins
HART049	Cable socket connector RSF50
HART058	Cable socket connector, DIN 43650, micro

OVERVIEW

10.00.0091	Accessories overview
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Additional documents

OPERATING AND SAFETY INSTRUCTIONS

Article number	
10.88.0437	DMM042

Ordering information

		X.	XXXX.	XXXX.	XX.	XXX
Type						
	ATM/IS	83				
Pressure type						
	Gauge	1				
	Absolute (vacuum)	2				
	Sealed gauge	3				
Pressure measuring range						
	100 mbar ... 600 bar	XX				
	600 ... 690 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, (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	98				
	G 1/2 M, frontal diaphragm (Fig. 5), (4)	14				
	G 1/2 male, frontal diaphragm Hastelloy C-276, (4)	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 with metal threaded part, demountable, IP 65 (Fig. 10), (5), (16)	01				
	M16 (Binder 723), 5 pins, IP 67 (Fig. 11), (5)	03				
	M16 (Binder 723), 5 pins, demountable, IP 67, (Fig. 12), (5)	43				
	MIL C26482, 10-6, IP 40 (Fig. 13), (5)	06				
	M12x1, 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	

(4) Process connection available ≤ 600 bar

(5) Cable socket connector not included

(6) Please specify the required cable length and medium

(7) For operating temperature $> 50^{\circ}\text{C}$, FEP cable must be used

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

(16) Connector side not to be used in Zone 0 or Ex ia IIC, explosion risk

Pressure connections

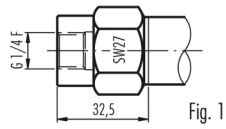


Fig. 1

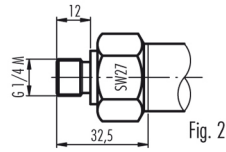


Fig. 2

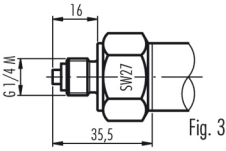


Fig. 3

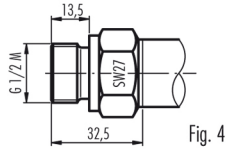


Fig. 4

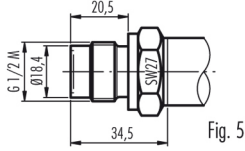


Fig. 5

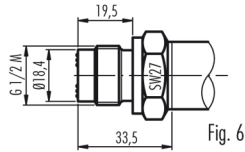


Fig. 6

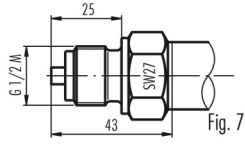


Fig. 7

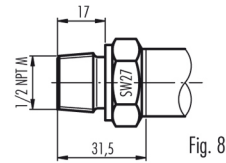
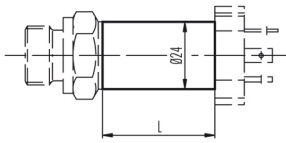


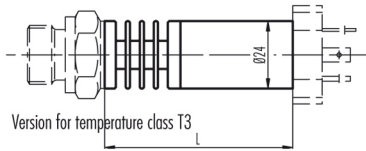
Fig. 8

Dimensions

Version for temperature class T4...T6



L = 55mm for connector DIN 43650 (Fig. 10)
L = 94mm for version with surge (lightning) protection



Version for temperature class T3

L = 82mm for connector DIN 43650 (Fig. 10)
L = 121mm for version with surge (lightning) protection

Electrical connections

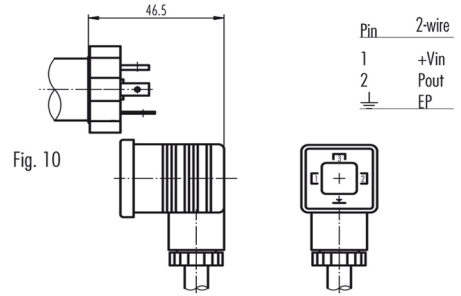


Fig. 10

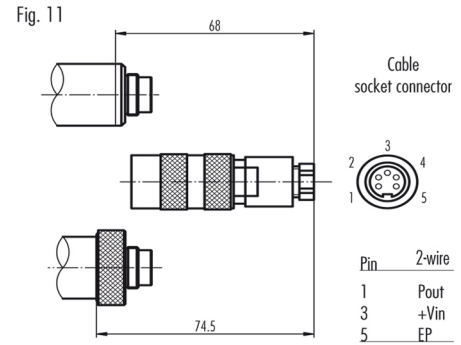


Fig. 11

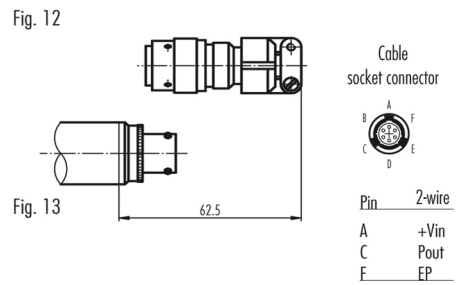


Fig. 12

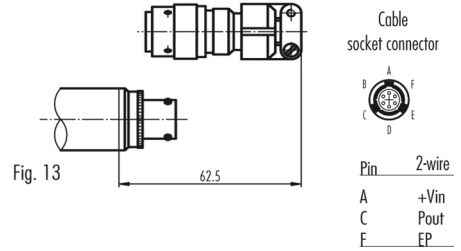


Fig. 13

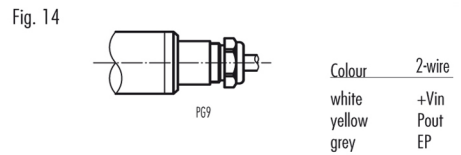


Fig. 14

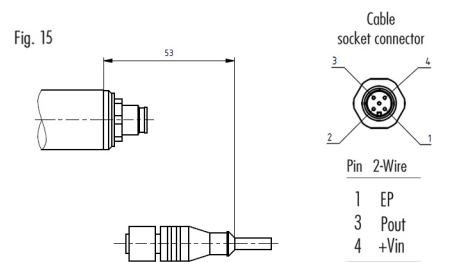


Fig. 15