

Pressure Transmitter

ATM - Analog Pressure Transmitter



CUSTOMER BENEFITS

- Fast customization thanks to configurable product design
- Demountable electrical connector option to allow adjustment of zero and span setting in the field
- Compact design requires minimal space
- Short response time 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% FS	< 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), (4)	> 600 ... 1000, (2), (3)
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

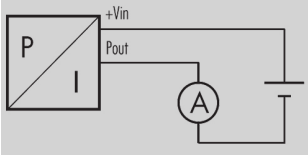
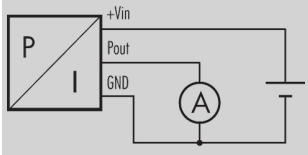
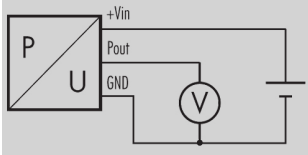
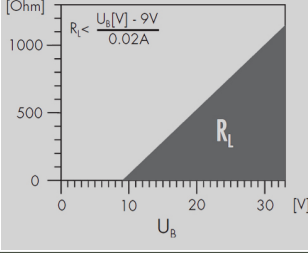
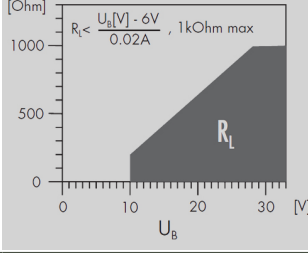
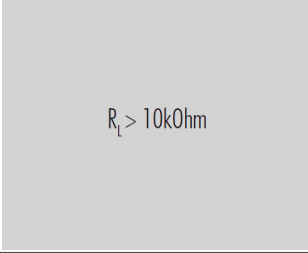
(6) Zero based accuracy according to DIN-16086, incl. hysteresis and repeatability at ambient temperature

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

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	0 ... 20 mA	0 ... 5 V / 0 ... 10 V
Power supply	9 ... 33 VDC	9 ... 33 VDC	15 ... 30 VDC
Supply influence	< 0.1% FS	< 0.1% FS	< 0.1% FS
Current consumption	3 mA		
Circuit diagram			
Load resistance			
Load influence	< 0.1% FS	< 0.1% FS	< 0.1% FS

QUALIFICATIONS

	Description	Level	Typical interferences
EN 61000-4-2	Electrostatic discharge	4 kV contact / 8 kV air	
EN 61000-4-3	Irradiated RF	10V/m (0.08 ... 1 GHz)	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)	Frequency converters

(1) Only with optional overvoltage 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, NBR
Cable	PUR, FEP, PE

(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

Additional documents

OPERATING AND SAFETY INSTRUCTIONS

Article number	
10.88.0092	DMM029

Ordering information

		X.	XXXX.	XXXX.	XX.	XXX
Type						
	ATM	23				
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	10				
	1/2 NPT M, (Fig. 8)	19				
	G 1/4 M (Fig. 2)	11				
	G 1/4 flush diaphragm (3)	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 (3)	41				
	G 1/2 M, frontal diaphragm (Fig. 5), (3)	14				
	G 1/2 M, frontal diaphragm Hastelloy C-276 (3)	37				
	G 1/2 M, flush diaphragm (Fig. 6), (3)	15				
	G 1/2 M, Manometer DIN-16288, (Fig. 7)	16				
	G 1/2 M, with bore Ø 14 mm	17				
	Customized	99				
Electrical connection						
	DIN-43650 plastic PA, with metal threaded part, demountable IP 65 (Fig. 10) (5)	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				
	M12 (Lumberg RSF4), 4 pins (Fig. 15), (5)	07				
	PE cable, black, IP 67 (Fig. 14), (6)	13				
	PUR cable, black, IP 67 (Fig. 14), (6), (8)	15				
	PUR cable, black, with submersible back end IP 68, (6), (8)	24				
	FEP cable, black (Fig. 14), (6)	21				
	Customized	99				
Output signal						
	4 ... 20 mA	05				
	0 ... 20 mA	00				
	0 ... 5 VDC	46				
	0 ... 10 VDC	47				
	4 ... 20 mA with surge protection	08				
	0 ... 10 VDC with surge protection	49				
	0 ... 5 VDC with surge protection	50				

	Customized	99	
Accuracy			
	$\leq 600 \text{ bar} \leq \pm 0.5 \% \text{ FS}$	0	
	$\leq 600 \text{ bar} \leq \pm 0.25 \% \text{ FS}$	1	
	$\leq 600 \text{ bar} \leq \pm 0.1 \% \text{ FS}$	2	
	$> 600 \text{ bar} \leq \pm 1 \% \text{ FS}$	5	
	$> 600 \text{ bar} \leq \pm 0.5 \% \text{ FS}$	0	
	$> 600 \text{ bar} \leq \pm 0.25 \% \text{ FS}$	1	
Temperature range			
	0 ... 70°C compensated (allowed process temperature: -25 ... 100°C)	0	
	25 ... 100°C compensated (allowed process temperature: -25 ... 100°C)	7	
	-25 ... 85°C compensated (allowed process temperature: -25 ... 100°C)	1	
	-25 ... 85°C compensated (allowed process temperature: -25 ... 150°C) with cooling fins	2	
	20 ... 100°C compensated (allowed process temperature: -25 ... 150°C) with cooling fins	6	
	-40 ... 100°C compensated (allowed process temperature: -40 ... 100°C)	3	
	-40 ... 100°C compensated (allowed process temperature: -40 ... 150°C) with cooling fins	4	
	Customized	9	
Option 1			
	Throttle, (9)		A
	Special oil filling: Anderol Food (for food applications)		G
	Special oil filling: AS 100		J
	Special oil filling: PAO4 (silicone free)		Q
	Pressure connection elastomerfree		N
	Pressure connection welded		V
Option 2			
	Electronics packed in gel: Gauge pressure		C
	Electronics packed in gel: Absolute pressure		D
Option 3			
	Version titanium		K
	Seals: Viton (standard)		U
	Seals: EPDM		S
	Seals: Kalrez (Industry)		T
	Seals: NBR (ACS)		H

(3) Process connection available $\geq 6 \text{ bar}$ to $\leq 600 \text{ bar}$

(5) Cable socket connector not included

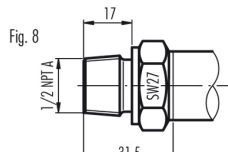
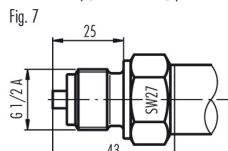
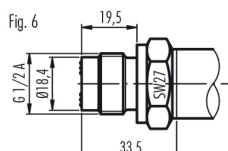
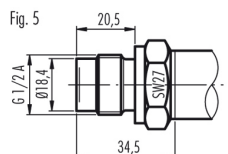
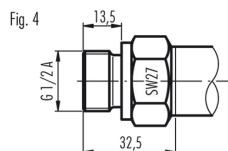
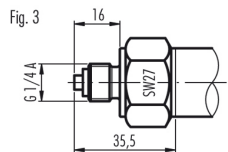
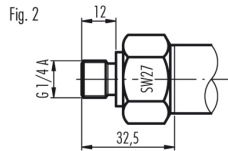
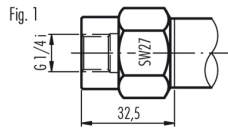
(6) Please specify the required cable length and medium

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

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

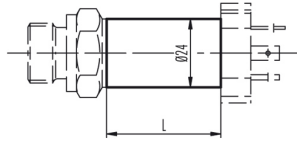
Technical drawings

Pressure Connections



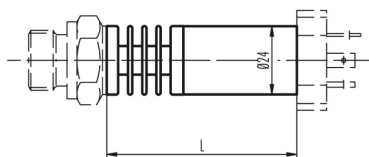
Dimensions

Version for medium temperature up to 100°C



L = 94 mm for version with surge (lightning) protection
L = 45 mm for all other versions

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



L = 121 mm for version with surge (lightning) protection
L = 72 mm for all other versions

Electrical Connections

Fig. 10

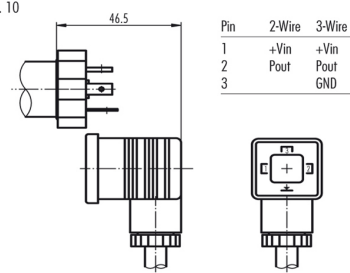


Fig. 11

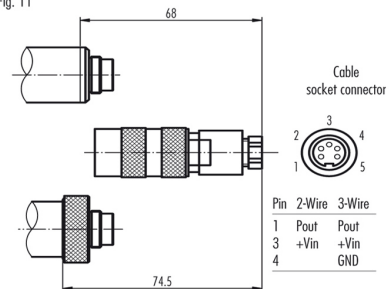


Fig. 12

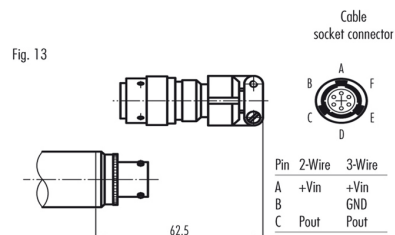


Fig. 13

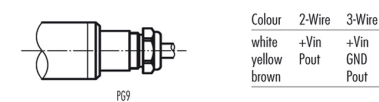
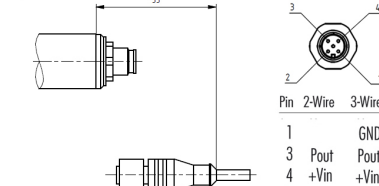


Fig. 14



Specifications may change without notice.

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