

## Pressure Transmitter

# ATM - Analog Pressure Transmitter



### CUSTOMER BENEFITS

- Fast customization thanks to configurable product design
- Any measuring ranges between 0...100mbar and 0...1000bar available
- 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 ( $\geq 3$ 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	$\leq 0.06$	$\leq 0.03$	$\leq 0.015$
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	$\leq 0.02$	$\leq 0.02$	$\leq 0.02$
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 / $\leq 1500$ 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	$\leq 0.015$	$\leq 0.015$
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	$\leq 0.02$	$\leq 0.02$
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  $\leq 400$  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) Transducer

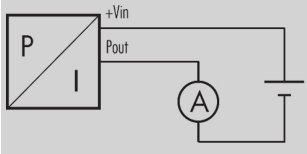
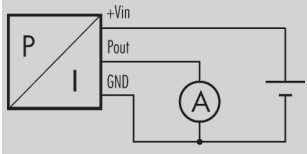
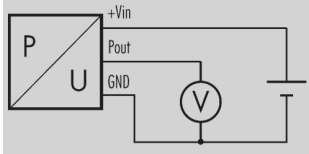
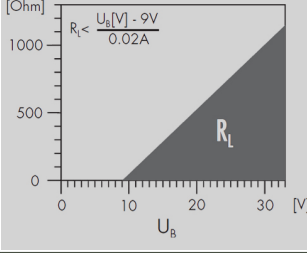
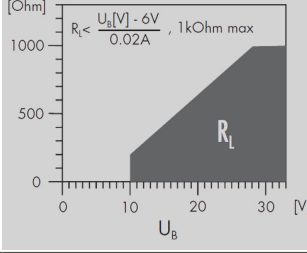
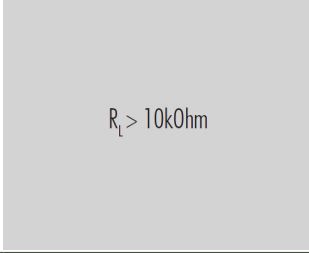
(6) Zero based accuracy according to DIN-16086, incl. hysteresis and repeatability at ambient temperature

(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

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## 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

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## OPERATING AND SAFETY INSTRUCTIONS

Article number	
10.88.0092	DMM029

# Ordering information

	X	XXX	XXX	XX	XXX
<b>Type</b>					
ATM					23
<b>Pressure type</b>					
Gauge					1
Absolute (vacuum)					2
Sealed gauge					3
<b>Pressure measuring range</b>					
50 mbar ... < 100 mbar				XX	
100 mbar ... 600 bar				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 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 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 M, with bore Ø 14 mm					17
Customized					99
<b>Electrical connection</b>					
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
M12x1, 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
<b>Output signal</b>					
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
<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>		
	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
<b>Option 1</b>		
	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
<b>Option 2</b>		
	Electronics packed in gel: Gauge pressure	C
	Electronics packed in gel: Absolute pressure	D
<b>Option 3</b>		
	Version titanium	K
	Seals: Viton (standard)	U
	Seals: EPDM	S
	Seals: Kalrez (Industry)	T
	Seals: NBR (ACS)	H

(4) Process connection available ≤ 600 bar

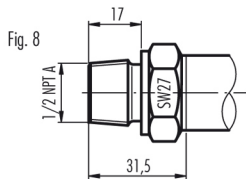
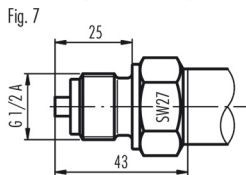
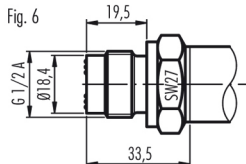
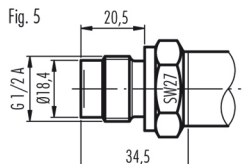
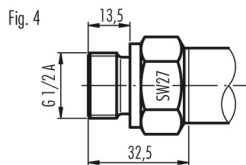
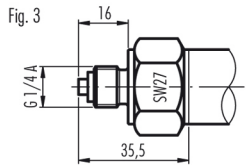
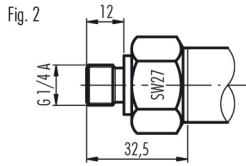
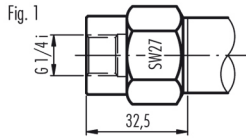
(5) Cable socket connector not included

(6) Please specify the required cable length and medium

(8) For operating temperature > 50°C, PE or FEP cable must be used

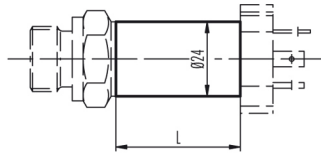
(9) Only with pressure connection Fig. 2, Fig. 3, Fig. 4, Fig. 7 and Fig. 8

**Pressure Connections**



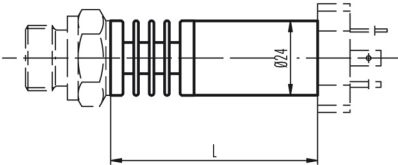
**Dimensions**

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**

