

Pressure Transmitter

ATM.1ST - High Precision Transmitter



CUSTOMER BENEFITS

- High measurement accuracy is ensured by sophisticated digital temperature compensation algorithms
- Stainless steel and titanium version for use in acidic or otherwise aggressive media
- Short response times suitable for dynamic pressure measurements
- Fast customization thanks to modular product design

Technical Specifications

PRESSURE MEASURING RANGE (BAR)

	0.1 ... 0.5 (1)	> 0.5 ... 2	> 2 ... 100
Overpressure	3 bar	3 x FS (≥ 3 bar)	3 x FS
Burst pressure, (5)	> 200 bar	> 200 bar	> 850 bar
Accuracy, (6) (\pm % FS)	≤ 0.10	≤ 0.10 / ≤ 0.05 (9)	≤ 0.10 / ≤ 0.05 (9)
Total Error, (7) (\pm % FS ; typ. / max.)			
0...70 °C compensated / Allowed process temperature -40...150°C, (8)	≤ 0.5 / 1.0	≤ 0.2 / 0.4	≤ 0.1 / 0.3
-25...100 °C compensated / Allowed process temperature -40...150°C, (8)	≤ 1.3 / 1.5	≤ 0.75 / 1.0	≤ 0.75 / 1.0
-40...100°C compensated / Allowed process temperature -40...150°C, (8)	≤ 1.5 / 2.0	≤ 1.0 / 1.5	≤ 1.0 / 1.25
0...70 °C compensated / Allowed process temperature -40...150°C, (9)	n.a.	≤ 0.1 / 0.2	≤ 0.1 / 0.2
-25...100 °C compensated / Allowed process temperature -40...150°C, (9)	n.a.	≤ 0.3 / 0.6	≤ 0.3 / 0.6
-40...125 °C compensated / Allowed process temperature -40...150°C, (9)	n.a.	≤ 0.5 / 0.8	≤ 0.5 / 0.8
Response time, (typ.)	< 1ms / 10...90% FS	< 1ms / 10...90% FS	< 1ms / 10...90% FS
Long term stability, (10)	< 0.5% FS / < 4 mbar	< 0.2% FS / < 4 mbar	< 0.1% FS / < 0.2% FS

	> 100 ... 600, (2), (4)	> 600 ... 1000, (3)
Overpressure	3 x FS (≤ 850 / ≤ 1500 bar)	1500 bar
Burst pressure, (5)	> 850 / ≤ 1500 bar	> 1500 bar
Accuracy, (6) (\pm % FS)	≤ 0.10	≤ 0.25
Total Error, (7) (\pm % FS ; typ. / max.)		
0...70 °C compensated / Allowed process temperature -40...150°C, (8)	≤ 0.3 / 0.5	≤ 0.3 / 0.5
-25...100 °C compensated / Allowed process temperature -40...150°C, (8)	≤ 0.75 / 1.0	≤ 0.75 / 1.0
-40...100°C compensated / Allowed process temperature -40...150°C, (8)	≤ 1.0 / 1.25	≤ 1.0 / 1.25
0...70 °C compensated / Allowed process temperature -40...150°C, (9)	n.a.	n.a.
-25...100 °C compensated / Allowed process temperature -40...150°C, (9)	n.a.	n.a.
-40...125 °C compensated / Allowed process temperature -40...150°C, (9)	n.a.	n.a.
Response time, (typ.)	< 1ms / 10...90% FS	< 1ms / 10...90% FS
Long term stability, (10)	< 0.1% FS / < 0.2% FS	< 0.1% FS / < 0.2% FS

1) 50 mbar on request

(2) Titanium available <400bar (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) Total error including accuracy and temperature influences at maximum signal span (16 mA / 10 V DC)

(8) For currents and voltage output signals

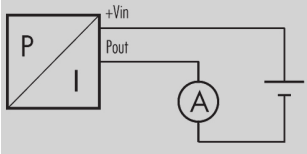
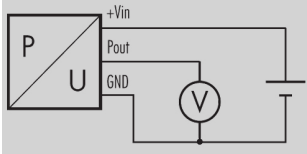
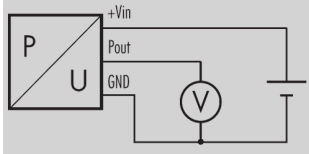
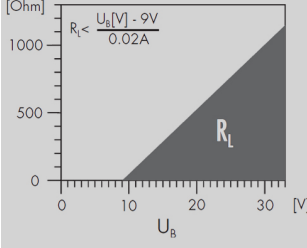
(9) Active compensation, only for current output signals

(10) 1 year (typ. / max.), the long term stability can be improved by aging (burn-in) the sensor

TEMPERATURE RANGE

Operating temperature	-40...125 °C
Process temperatur	-40...150 °C
Storage temperatur	-40...125 °C

ELECTRICAL SPECIFICATIONS

	4 ... 20 mA	0 ... 5 V	0 ... 10 V
Power supply	9...33 V DC	10...30 V DC	12...30 V DC
Supply influence	< 0.05% FS	< 0.05% FS	< 0.05% FS
Current consumption		3 mA	3 mA
Circuit diagram			
Load resistance		$R_L > 10k\Omega$	$R_L > 10k\Omega$
Load influence	< 0.05% FS	< 0.05% FS	< 0.05% FS

QUALIFICATIONS

	Description	Level	Typical interferences
EN 60068-2-6	Vibration	10 G (4...2000 Hz / ± 10 mmpp)	
EN 60068-2-27	Shock	100 G (impulse duration 6 ms)	
EN 55022	Emission, class B	< 30 dB μ V/m (0.03...1 GHz)	
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)	4 kV	Motors, valves
EN 61000-4-5	Surge	Line-Line: 0.5 kV/42 Ω , Line-Earth: 1 kV/42 Ω	Overvoltage
---	Surge (1)	Line-Line: 2.0 kV/2 Ω , Line-Earth 5 kV/12 Ω	Overvoltage
EN 61000-4-6	Conducted RF	3 V (0.15...80 MHz, 3 s)	Frequency converters

(1) Only with surge (lightning) protection

PHYSICAL SPECIFICATIONS

Materials	
Transducer	Stainless steel (316L / 1.4435), Titanium (Gr.2), (1)
Housing	Stainless steel (316L / 1.4435), Titanium (Gr.2)
Seals	Viton (Standard), EPDM, Kalrez, NBR
Cable	PUR, FEP, PE

(1) Hastelloy (C-276) on request

Equipment

CABLE SOCKET CONNECTOR

HART018	Cable socket M16 (Binder)
HART001	Cable Socket Connector DIN43650
HART002	Cable socket M16 (Binder 723), IP67, 5-pins
HART058	Cable Socket Connector DIN43650 MICRO

OVERVIEW

10.00.0091	Accessories overview
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Additional documents

OPERATING AND SAFETY INSTRUCTIONS

Article number	
10.88.0092	DMM029

	≤ ± 0.05 % FS (≥ 500 mbar...≤ 100 bar) (9) (active comp. / Option E)	6
Temperature range		
	0 ... 70°C compensated (allowed process temperature: -40 ... 125°C)	0
	-25 ... 100°C compensated (allowed process temperature: -40 ... 125°C)	1
	-25 ... 100°C compensated (allowed process temperature: -40 ... 150°C) with cooling fins	2
	-40 ... 100°C compensated (allowed process temperature: -40 ... 125°C)	3
	-40 ... 100°C compensated (allowed process temperature: -40 ... 150°C) with cooling fins	4
	-40 ... 125°C compensated (allowed process temperature: -40 ... 125°C), (9) Active compensated / Option E	6
Option 1		
	Throttle, (10)	A
	Special oil filling: Anderol Food (for food applications)	G
	Special oil filling: AS100 (suitable for process temperature -55 ... 150°C)	J
	Special oil filling: PAO4 (siliconfree)	Q
	Pressure connection elastomerfree	N
	Pressure connection welded	V
Option 2		
	Electronics packed in gel: Gauge pressure	C
	Electronics packed in gel: Absolute and sealed gauge sensors	D
Option 3		
	Active compensated (only 4 ... 20 mA and ≥ 500mbar ... ≤ 100bar)	E
	Titanium	K
	Seals: Viton (standard)	U
	Seals: EPDM	S
	Seals: Kalrez	T
	Seals: NBR (ACS)	H

(4) Process connection available ≥6 bar to ≤ 600 bar

(5) Cable socket connector not included

(6) Please specify the required cable length and medium

(7) Suitable for drinking water (food approved)

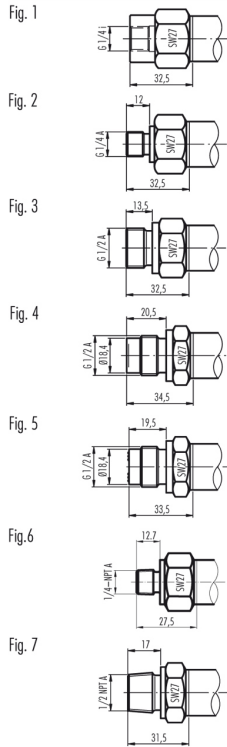
(8) For operating temperature > 50°C, PE or FEP cable must be used, with connector

(9) Active compensated, with connector

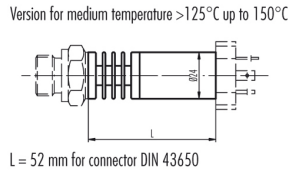
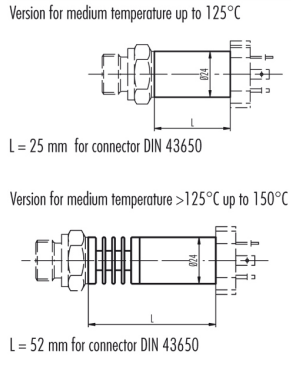
(10) Only with pressure connection Fig. 2, Fig. 3, Fig. 6 and Fig. 7

Technical drawings

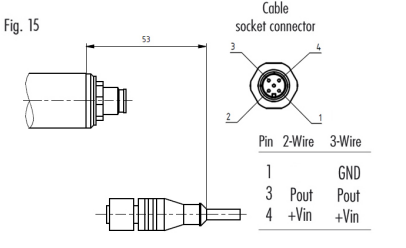
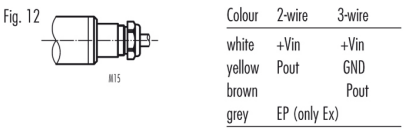
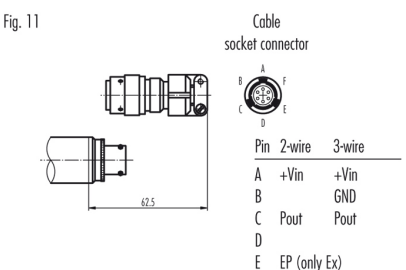
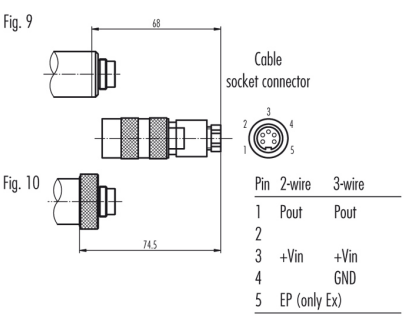
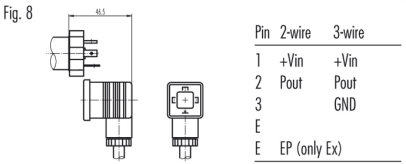
Pressure connections



Dimensions



Electrical Connections



Specifications may change without notice.

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