

Pressure Transmitter - FM / FM-C certified

## ATM.ECO/IS - Analog Transmitter with Temperature compensation



### CUSTOMER BENEFITS

- Certificate: FM, FM-C & IECEx & ATEX
- Entry level series into precision pressure measurement
- High accuracy is ensured by sophisticated digital temperature compensation algorithms
- Fast customization thanks to configurable product design

# Technical Specifications

## PRESSURE MEASURING RANGE (BAR)

	0.1 ... 0.5, (1)	> 0.5 ... 2	> 2 ... 100
Overpressure	3 bar	3 x FS ( $\geq$ 3 bar)	3 x FS
Burst pressure, (4)	> 200 bar	> 200 bar	> 850 bar
Accuracy, (5) ( $\pm$ % FS)	$\leq$ 0.25	$\leq$ 0.25	$\leq$ 0.25
Total Error, (6), ( $\pm$ % FS)			
0 ... 70°C, (typ. / max.)	$\leq$ 1.0 / 1.5	$\leq$ 0.7 / 1.0	$\leq$ 0.7 / 1.0
-25 ... 100°C, (typ. / max.)	$\leq$ 2.0 / 2.5	$\leq$ 1.0 / 1.5	$\leq$ 1.0 / 1.5
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

	> 100 ... 600, (2)	> 600 ... 690, (3), (8)
Overpressure	3 x FS ( $\leq$ 850 / $\leq$ 1500 bar)	1500 bar
Burst pressure, (4)	> 850 / $\leq$ 1500 bar	> 1500 bar
Accuracy, (5) ( $\pm$ % FS)	$\leq$ 0.25	$\leq$ 0.25
Total Error, (6), ( $\pm$ % FS)		
0 ... 70°C, (typ. / max.)	$\leq$ 0.7 / 1.0	$\leq$ 0.7 / 1.0
-25 ... 100°C, (typ. / max.)	$\leq$ 1.0 / 1.5	$\leq$ 1.0 / 1.5
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) Overpressure and burst pressure 1500 bar (stainless steel) optional

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

(4) Transducer

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

(6) Total error including accuracy and temperature influences at maximum signal span (16 mA)

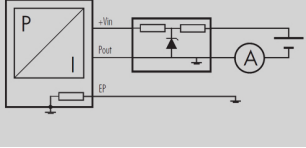
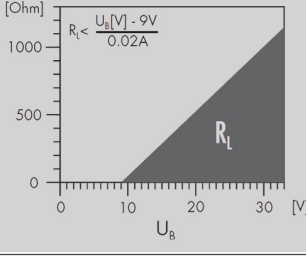
(7) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

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

## TEMPERATURE RANGE

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

## ELECTRICAL SPECIFICATIONS

	4 ... 20 mA
Power supply	9 ... 28 VDC
Supply influence	< 0.05% FS
Circuit diagram	
Load resistance	
Load influence	< 0.05% FS

## ATEX APPROVAL

Certificate, (1)	SEV 09 ATEX 0108 X	IECEX SEV 10.0003 X	IECEX MSC 14.0002 X
Gas	II 1G Ex ia IIB/IIC T3 ... T6	EN 60079-0 / -11 / -26	
Dust	II 1D Ex ia IIIC IP6x T140°C ... T70°C	EN 61241-0 / -11	
Mining	I M1 Ex ia I	EN 50303	
Temperature class, (2)	T6	T4	T3
Ambient temperature	-40 ... 50°C	-40 ... 90°C	-40 ... 125°C
Process temperature	-40 ... 50 °C	-40 ... 100 °C	-40 ... 150 °C
Maximum values of the intrinsically safe circuit	28V / 93 mA / 0.65W		

(1) For detailed Ex specifications see certificate and operating and safety instructions

(2) Without any information about temperature class the transmitter will be delivered for T4

## FM / FM-C APPROVAL

FM	3028239
FM-C	3028239C

## 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 dBµV/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
EN 61000-4-6	Conducted RF	3 V (0.15 ... 80 MHz, 3 s)	Frequency converters

## PHYSICAL SPECIFICATIONS

Materials	
Transducer	Stainless steel (316L / 1.4435)
Housing	Stainless steel (316L / 1.4404)
Seals	Viton (Standard), EPDM, Kalrez
Cable	PUR, FEP

# Equipment

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## CABLE SOCKET CONNECTOR

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

## OVERVIEW

10.00.0091	Accessories overview

# Additional documents

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## OPERATING AND SAFETY INSTRUCTIONS

	Article number
10.88.0092	DMM029

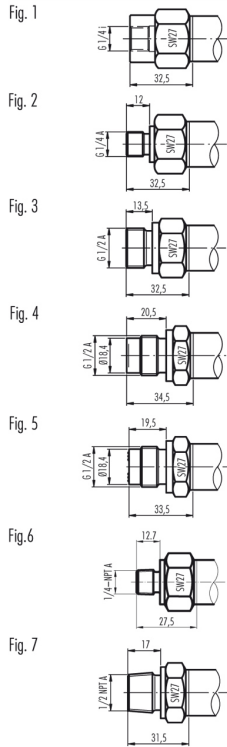


	Special oil filling: PAO4 (silicone free)			Q
<b>Option 2</b>				
<b>Option 3</b>				
	Seals: Viton (standard)			U
	Seals: EPDM			S
	Seals: Kalrez			T

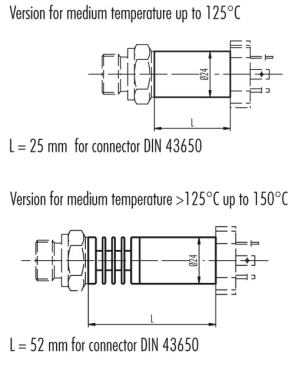
- (3) Process connection available  $\geq 6$  bar to  $\leq 600$  bar
- (4) Cable socket connector not included
- (5) Please specify the required cable length and medium
- (6) For operating temperature  $> 50^{\circ}\text{C}$ , FEP cable must be used
- (7) Only with pressure connection Fig. 2, Fig. 3, Fig. 6 and Fig. 7
- (16) Connector side not to be used in Zone 0 or Ex ia IIC, explosion risk

# Technical drawings

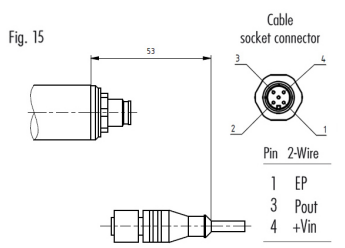
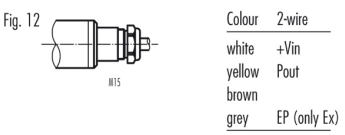
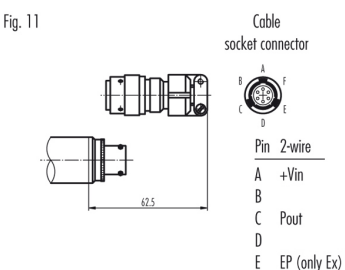
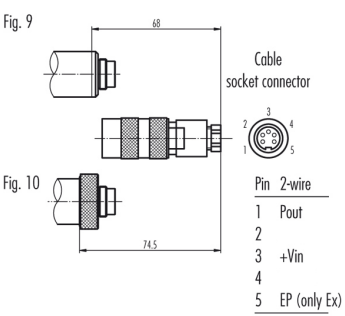
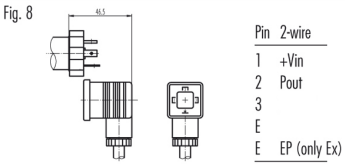
## Pressure connections



## Dimensions



## Electrical Connections



Specifications may change without notice.

**ST5 Headquarters, Switzerland:**  
 ST5 Sensor Technik, Sirmach AG  
 Rütihofstrasse 8 | 8370 Sirmach | Switzerland  
 sales@stssensors.com | www.stssensors.com

**ST5 China:**  
 ST5 Sensor Technology (Shanghai) Co. Ltd  
 Room 2603-2606 | North Building, Fortune | 108 Square  
 Lane 1839 | Qixin Road | Minhang District | Shanghai | China  
 sales@stssensors.com | www.stssensors.com.cn

**ST5 France:**  
 ST5 France  
 844 Route de la Caille | 74350 Allonziere la Caille | France  
 info-fr@stssensors.com | www.stssensors.fr

**ST5 Germany:**  
 ST5 Sensoren Transmitter Systeme GmbH  
 Poststrasse 7 | 71063 Sindelfingen | Germany  
 info-de@stssensors.com | www.stssensors.de

**ST5 Great Britain:**  
 ST5 Great Britain Ltd.  
 Box 3942 | Warwick | CV34 9AE | United Kingdom  
 contact@stssensors.com | www.stssensors.co.uk

**ST5 Italy:**  
 ST5 Italia s.r.l.  
 Via Lambro 36 | 20090 Opera (MI) | Italy  
 info-italia@stssensors.com | www.stssensors.it