



# XMD

## Differential Pressure Transmitter for Process Industry with HART®-Communication

accuracy according to IEC 60770:  
0.1 % FSO

### Nominal pressure

from 75 mbar up to 20 bar

### Output signals

2-wire: 4 ... 20 mA  
others on request

### Special characteristics

- ▶ static over pressure 130 bar
- ▶ turn-down 1:10
- ▶ two chamber aluminium die cast case
- ▶ HART<sup>®</sup>-communication
- ▶ output signal: linear or square root extraction
- ▶ IS-version  
Ex ia = intrinsically safe version






### Optional versions

- ▶ IS-version  
Ex d = flameproof enclosure
- ▶ with integrated display and operating module

The differential pressure transmitter XMD has been especially designed for the process industry and can be used for level measurement of closed, pressurized tanks, pump or filter controlling, etc.

Another attribute is the possibility to switch the output signal from linear to square root extraction by what the flow rate of the medium can be issued.

### Preferred areas of use are

-  Oil and gas industry
-  Chemical and petrochemical industry
-  Energy Industry
-  Food and beverage
-  Paper Industry

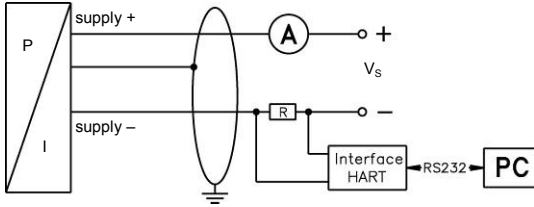


Pressure ranges						
Nominal pressure	[bar]	0.075	0.4	2	7	20
Permissible static pressure	[bar]	130	130	130	130	130
Output signal / Supply						
Standard	2-wire: 4 ... 20 mA					
Option	IS-intrinsically safe version with HART®-communication / $V_S = 12 \dots 28 V_{DC}$ IS version flameproof enclosure / $V_S = 13 \dots 28 V_{DC}$					
Performance						
Clocking error	$\leq \pm 0.2 \% \text{ FSO}$					
Accuracy <sup>1</sup>	turn-down $\leq 5:1$ : $\leq \pm 0.1 \% \text{ FSO}$ turn-down $> 5:1$ : $\leq \pm [0.1 + 0.015 \times \text{turn-down}] \% \text{ FSO}$ with turn-down = nominal pressure range / adjusted range					
Permissible load	load during HART®-communication: $R_{min} = 250 \Omega$					
Supply	$\leq 0.05 \% \text{ FSO} / 10 \text{ V}$					
Permissible load	$\leq 0.05 \% \text{ FSO} / \text{k}\Omega$					
Long term stability	$\leq \pm (0.1 \times \text{turn-down}) \% \text{ FSO} / \text{year}$ at reference conditions					
Response time	300 msec – with electronic damping 0 sec					
Measuring rate	3.5/sec					
Adjustability	electronic damping: 0 ... 100 sec offset: 0 ... 90 % FSO turn-down of span: max. 10:1					
<sup>1</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)						
Thermal effects (Offset and Span) / Permissible temperatures						
Thermal error	$\leq \pm (0.1 \times \text{turn-down}) \% \text{ FSO} / 10 \text{ K}$ in compensated range standard: $-20 \dots 80 \text{ }^\circ\text{C}$ optional for device without display: $-40 \dots 60 \text{ }^\circ\text{C}$					
Permissible temperatures	without display: medium: $-40 \dots 85 \text{ }^\circ\text{C}$ environment: $-40 \dots 50 \text{ }^\circ\text{C}$ storage: $-40 \dots 80 \text{ }^\circ\text{C}$ with display: medium: $-40 \dots 85 \text{ }^\circ\text{C}$ environment: $-20 \dots 50 \text{ }^\circ\text{C}$ storage: $-30 \dots 80 \text{ }^\circ\text{C}$					
Electrical protection						
Short-circuit protection	permanent					
Reverse polarity protection	no damage, but also no function					
Electromagnetic compatibility	emission and immunity according to EN 61326					
Mechanical stability						
Vibration	5 g RMS (25 ... 2000 Hz)		according to DIN EN 60068-2-6			
Shock	100 g / 1 msec		according to DIN EN 60068-2-27			
Materials						
Pressure port	stainless steel 1.4401 (316)					
Housing	aluminium die cast, powder-coated					
Viewing glass	laminated safety glass					
Seals (media wetted)	FKM / EPDM					
Diaphragm						
Standard	stainless steel 1.4435 (316 L)					
Option	Hastelloy® C-276 (2.4819)					
Media wetted parts	pressure port, seals, diaphragm					
Filling fluids	silicon oil					
Explosion protection						
Approval AX12-XMD	IBExU 05 ATEX 1106 X zone 1: II 2G Ex ia IIB T4 Gb zone 20: II 1D Ex ia IIIC T85 °C Da					
Safety technical maximum values for intrinsically safe version	$U_i = 28 \text{ V}$ , $I_i = 98 \text{ mA}$ , $P_i = 680 \text{ mW}$ , $C_i = 0 \text{ nF}$ , $L_i = 0 \text{ }\mu\text{H}$ , $C_{GND} = 27 \text{ nF}$					
Approval AX17-XMD (flameproof enclosure)	IBExU 12 ATEX 1045 X zone 1: II 2G Ex d IIC T5 Gb					
Permissible temperatures for environment	$-20 \dots 65 \text{ }^\circ\text{C}$ (intrinsically safe version); $-20 \dots 70 \text{ }^\circ\text{C}$ (flameproof enclosure)					
Miscellaneous						
Display (optionally)	LC display, visible range 32.5 x 22.5 mm; 5-digit 7-segment main display, digit height 8 mm, range of indication $\pm 9999$ ; 8-digit 14-segment additional display, digit height 5 mm; 52-segment bargraph; accuracy 0.1% $\pm 1$ digit					
Ingress protection	IP 67					
Installation position	any					
Weight	min. 3500 g					
Current consumption	approx. 21 mA					
Operational life	$> 100 \times 10^6$ cycles					
CE-conformity	EMC Directive: 2004/108/EC					

### Connections

Electrical connection	terminal clamps in clamping chamber with cable gland M20x1.5 (for cable-Ø 5 up to 14 mm)
Process connections	internal thread 1/4" - 18 NPT

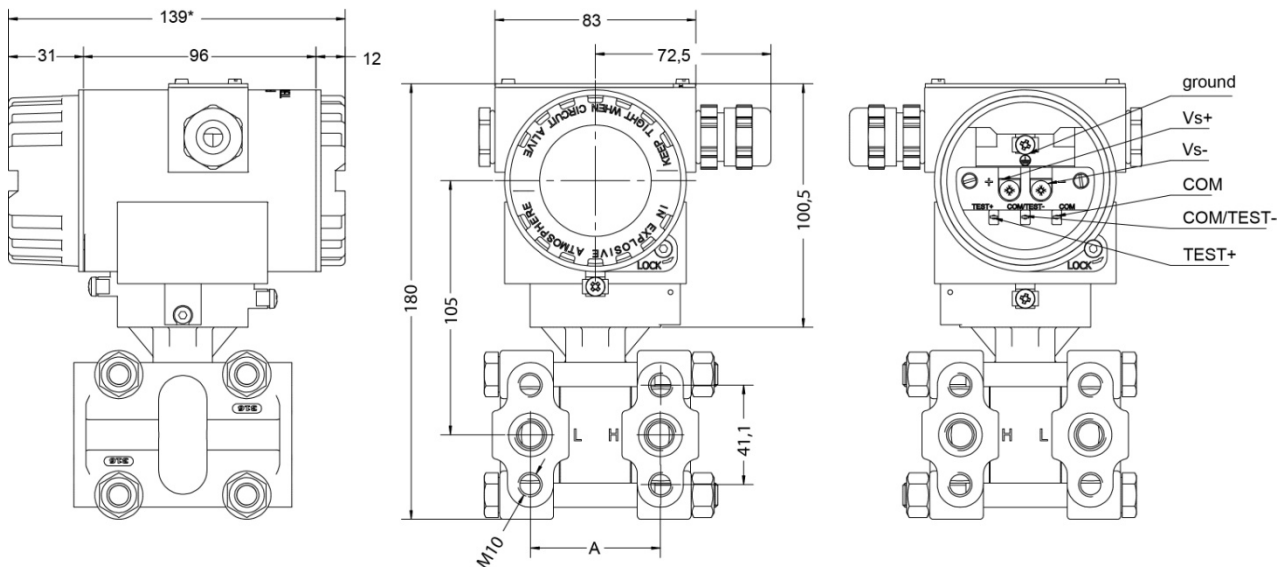
### Wiring diagram



### Pin configuration

Electrical connection	terminal clamps (clamp section 2.5 mm <sup>2</sup> )
Supply + (Vs+)	+
Supply - (Vs-)	-
Test +	TEST+
COM / Test -	COM/TEST-
COM	COM
Ground	⏏

### Dimensions (in mm)<sup>2</sup>



$P_N = 0,075 \text{ bar}, 0,4 \text{ bar}, 2 \text{ bar} : A = 54,5 \pm 0,5 \text{ mm}$   
 $P_N = 7 \text{ bar} : A = 56,0 \pm 0,5 \text{ mm}$   
 $P_N = 20 \text{ bar} : A = 56,5 \pm 0,5 \text{ mm}$

\* without display and operating module marked dimensions decrease by 19 mm

<sup>2</sup> aluminium die cast case is horizontally rotatable as standard

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### Pressure Transmitter for Process Industry

#### XMP ci



#### Characteristics

- ▶ pressure ranges from 0.06 up to 20 bar
- ▶ turn-down 1:10
- ▶ two chamber aluminium die cast case or stainless steel field housing
- ▶ internal or flush mounted capacitive ceramic sensor
- ▶ HART<sup>®</sup> -communication (standard)
- ▶ IS-version (standard):  
Ex ia = intrinsically safe version
- ▶ accuracy according to IEC 60770:  
0.1 % FSO



#### XMP i



#### Characteristics

- ▶ pressure ranges for vacuum, gauge and absolute pressure from 0.4 up to 600 bar
- ▶ turn-down 1:10
- ▶ two chamber aluminium die cast case or stainless steel field housing
- ▶ internal or flush welded diaphragm
- ▶ HART<sup>®</sup> -communication (standard)
- ▶ IS-version (standard):  
Ex ia = intrinsically safe version
- ▶ accuracy according to IEC 60770:  
0.1 % FSO



### Precision Pressure Transmitter for Food Industry, Pharmacy and Biotechnology

#### x|act ci



#### Characteristics

- ▶ pressure ranges from 0,06 up to 20 bar
- ▶ turn-down 1:10
- ▶ hygienic version
- ▶ flush mounted, capacitive ceramic sensor
- ▶ several process connections (inch thread, Clamp, etc.)
- ▶ with integrated display and operating module
- ▶ accuracy according to IEC 60770:  
0.1 % FSO



#### x|act i



#### Characteristics

- ▶ pressure ranges from 0,4 up to 40 bar
- ▶ turn-down 1:10
- ▶ hygienic version
- ▶ flush welded diaphragm
- ▶ several process connections (G1" cone, Clamp, dairy pipe, etc.)
- ▶ with integrated display and operating module
- ▶ accuracy according to IEC 60770:  
0.1 % FSO



