



## XMD

### Differential Pressure Transmitter for Process Industry with HART®-Communication and SIL2 (optionally)

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®-communication
- ▶ output signal: linear or square root extraction
- ▶ IS-version  
Ex ia = intrinsically safe version






#### Optional versions

- ▶ IS-version  
Ex d = flameproof enclosure
- ▶ SIL2 - version  
according to IEC 61508 / IEC 61511
- ▶ 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



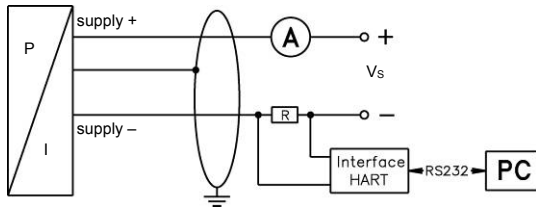
Pressure ranges						
Nominal pressure	[bar]	0.075	0.4	2	7	20
Permissible static pressure	[bar]	130	130	130	130	130
Output signal / Supply						
Standard	2-wire: 4 ... 20 mA	IS-intrinsically safe version with HART®-communication			$V_S = 12 \dots 28 V_{DC}$	
Option	2-wire: 4 ... 20 mA	IS version flameproof enclosure with HART®-communication			$V_S = 13 \dots 28 V_{DC}$	
		IS-intrinsically safe version with HART®-communication and SIL2			$V_S = 12 \dots 28 V_{DC}$	
		IS version flameproof enclosure with HART®-communication and SIL2			$V_S = 13 \dots 28 V_{DC}$	
Performance						
Cloning 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		$\leq 0.05 \% \text{ FSO} / 10 V$				
Permissible load		$\leq 0.05 \% \text{ FSO} / k\Omega$				
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		$\leq \pm (0.1 \times \text{turn-down}) \% \text{ FSO} / 10 K$ 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		silicone oil				
Explosion protection						
Approval AX12-XMD		intrinsically safe IBExU 05 ATEX 1106 X (IBExU 05 ATEX1105 X with SIL2)				
Approval AX2-XMD (with SIL2)		zone 1: II 1/2G Ex ia IIB T4 Ga/Gb	zone 20: II 1D Ex ia IIIC T85 °C Da			
Safety technical maximum values		$U_i = 28 V$ , $I_i = 98 \text{ mA}$ , $P_i = 680 \text{ mW}$ , $C_i = 0 \text{ nF}$ , $L_i = 0 \text{ } \mu\text{H}$ , $C_{GND} = 27 \text{ nF}$				
Approval AX17-XMD		flameproof enclosure IBExU 12 ATEX 1045 X (IBExU 12 ATEX1073 X with SIL2)				
Approval AX7-XMD (with SIL2)		zone 1: II 2G Ex d IIC T5 Gb				
Permissible temperatures for environment		intrinsically safe version :	$-40 \dots 70 \text{ }^\circ\text{C}$			
		flameproof enclosure :	$-20 \dots 70 \text{ }^\circ\text{C}$			
Options						
SIL2-version		according to IEC 61508 / IEC 61511				
Display		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 $0.1\% \pm 1 \text{ digit}$				
Miscellaneous						
Ingress protection		IP 67				
Installation position		any				
Weight		min. 3 500 g				
Current consumption		approx. 21 mA				
Operational life		100 million load cycles				
CE-conformity		EMC Directive: 2014/30/EU				
ATEX Directive		2014/34/EU				

### 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

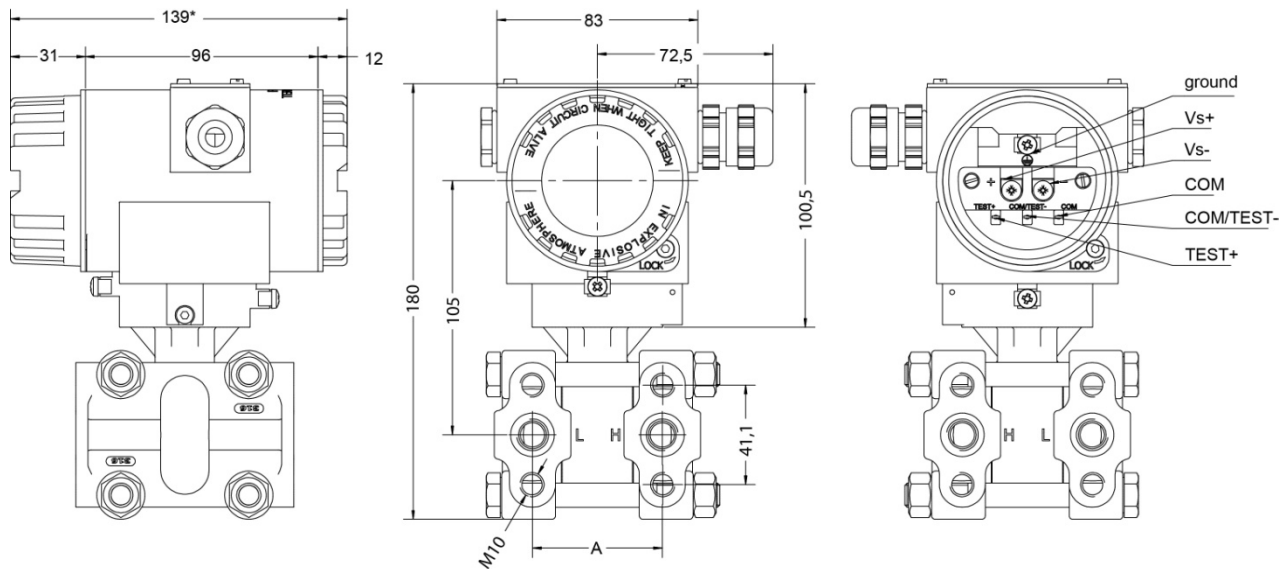
2-wire-system (current) and HART® - communication



### 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®-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®-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



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