



# XMD

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

accuracy according to IEC 60770:  
0.1 % FSO

Differential Pressure Transmitter

XMD

**Nominal pressure:**

from 75 mbar up to 2 bar

**Output signals:**

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

**Special characteristics:**

- ▶ static over pressure 130 bar
- ▶ turn-down 10:1
- ▶ 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
- ▶ with integrated display and operating module
- ▶ prepared for chemical seals assembly

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**



Petrochemical Industry



Chemical Industry



Energy Industry



Food Industry



Paper Industry



<b>Pressure ranges</b>			
Nominal pressure [mbar]	75	400	2000
Permissible static pressure [bar]	130	130	130
<b>Output signal / Supply</b>			
Standard	2-Leiter: 4 ... 20 mA with HART <sup>®</sup> -communication: $V_s = (12 \text{ V} + 20 \text{ mA} \times R_{\min}) \dots 28 \text{ V}$		
<b>Performance</b>			
Clocking error	$\leq \pm 0.2 \%$ FSO		
Accuracy <sup>1</sup>	turn-down $\leq 5:1$ : $\leq \pm 0.1 \%$ FSO turn-down $> 5:1$ : $\leq \pm [0.1 + 0.015 \times \text{turn-down}] \%$ FSO with turn-down = nominal pressure range / adjusted range		
Permissible load	load during HART <sup>®</sup> -communication: $R_{\min} = 250 \Omega$		
Supply	0.05 % FSO / 10 V		
Permissible load	0.05 % FSO / k $\Omega$		
Long term stability	$\leq \pm (0.1 \times \text{turn-down}) \%$ FSO / 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)			
<b>Thermal effects (Offset and Span) / Permissible temperatures</b>			
Thermal error	$\leq \pm (0.1 \times \text{turn-down}) \%$ FSO / 10 K in compensated range standard: -20 ... 80 °C optional for device without display: -40 ... 60 °C		
Permissible temperatures	without display: medium: -40 ... 85 °C    environment: -40 ... 50 °C    storage: -40 ... 80 °C with display: medium: -40 ... 85 °C    environment: -20 ... 50 °C    storage: -30 ... 80 °C		
<b>Electrical protection</b>			
Short-circuit protection	permanent		
Reverse polarity protection	no damage, but also no function		
Electromagnetic compatibility	emission and immunity according to EN 61326		
<b>Mechanical stability</b>			
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	
<b>Materials</b>			
Pressure port	stainless steel 1.4401 (316)		
Housing	Aluminium die cast, powder-coated		
Viewing glass	laminated safety glass		
Seals (media wetted)	FKM / EPDM		
Diaphragm	stainless steel 1.4435 (316 L)		
Media wetted parts	pressure port, seals, diaphragm		
Filling fluids	silicon oil		
<b>Explosion protection</b>			
Intrinsically safe version	zone 0/1: II 1/2 G Ex ia IIC T4		
Flameproof enclosure	zone 1: II 2 G Ex d IIC T5		
Permissible temperatures for environment	intrinsically safe version: -20 ... 65 °C flameproof enclosure: -20 ... 80 °C		
Safety technical maximum values for intrinsically safe version	$U_i = 28 \text{ V}$ , $I_i = 93 \text{ mA}$ , $P_i = 660 \text{ mW}$ ; $C_j = 26.4 \text{ nF}$ ; $L_i = 0$		
<b>Miscellaneous</b>			
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-segement bargraph; accuracy 0.1% $\pm 1$ digit		
Ingress protection	IP 67		
Installation position	any		
Weight	min. 3500 g		
Current consumption	max. 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 +	2
Supply -	4
Test	3
Shield	1
Dimensions (in mm) <sup>2</sup>	
* without display and operating module marked dimensions decrease by 19 mm	
<sup>2</sup> aluminium die cast case is horizontally rotatable as standard HART® is a registered trade mark of HART Communication Foundation; Hastelloy® is a brand name of Haynes International Inc. Windows® is a registered trade mark of Microsoft Corporation	

### Pressure Transmitter for Process Industry

#### XMP ci



##### Characteristics

- ▶ pressure ranges from 0.06 up to 20 bar
- ▶ turn-down 1:5
- ▶ two chamber aluminium die cast case or stainless field housing
- ▶ internal or flush mounted capacitive ceramic sensor
- ▶ HART<sup>®</sup>-communication (standard)
- ▶ IS-version (standard): EEx ia = intrinsically safe version
- ▶ accuracy according to IEC 60770: 0.2 % FSO



#### XMP i



##### Characteristics

- ▶ pressure ranges for vacuum, gauge and absolute pressure from 0.40 up to 600 bar
- ▶ turn-down 1:10
- ▶ two chamber aluminium die cast case or stainless field housing
- ▶ internal or flush welded diaphragm
- ▶ HART<sup>®</sup>-communication (standard)
- ▶ IS-version (standard): EEx ia = intrinsically safe version
- ▶ accuracy according to IEC 60770: 0.1 % FSO



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

#### xlact ci



##### Characteristics

- ▶ pressure ranges from 60 mbar up to 20 bar
- ▶ turn-down 1:5
- ▶ 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: 0.2 % FSO



#### xlact i



##### Characteristics

- ▶ pressure ranges from 400 mbar 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



This data sheet contains product specification; properties are not guaranteed. Subject to change without notice.

