



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®-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

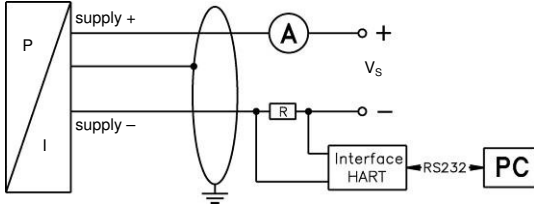


Pressure ranges						
Nominal pressure	[bar]	0.075	0.4	2	7	20
Permissible static pressure	[bar]	130	130	130	130	130
Output signal / Supply						
Standard	2-wire: 4 ... 20 mA	IS-intrinsically safe version with HART [®] -communication			V _S = 12 ... 28 V _{DC}	
Option	2-wire: 4 ... 20 mA	IS version flameproof enclosure with HART [®] -communication			V _S = 13 ... 28 V _{DC}	
Performance						
Clocking error		≤ ± 0.2 % FSO				
Accuracy ¹		turn-down ≤ 5:1: ≤ ± 0.1 % FSO turn-down > 5:1: ≤ ± [0.1 + 0.015 x turn-down] % FSO with turn-down = nominal pressure range / adjusted range				
Permissible load		load during HART [®] -communication: R _{min} = 250 Ω				
Supply		≤ 0.05 % FSO / 10 V				
Permissible load		≤ 0.05 % FSO / kΩ				
Long term stability		≤ ± (0.1 x 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				
¹ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)						
Thermal effects (Offset and Span) / Permissible temperatures						
Thermal error		≤ ± (0.1 x 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		
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		IBExU 05 ATEX 1106 X 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 mA, P _i = 680 mW, C _i = 0 nF, L _i = 0 μH, C _{GND} = 27 nF				
Approval AX17-XMD (flameproof enclosure)		IBExU 12 ATEX 1045 X zone 1: II 2G Ex d IIC T5 Gb				
Permissible temperatures for environment		-40 ... 70 °C (intrinsically safe version); -20 ... 70 °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 ±9999; 8-digit 14-segment additional display, digit height 5 mm; 52-segment bargraph; accuracy 0.1% ± 1 digit				
Ingress protection		IP 67				
Installation position		any				
Weight		min. 3500 g				
Current consumption		approx. 21 mA				
Operational life		> 100 x 10 ⁶ 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

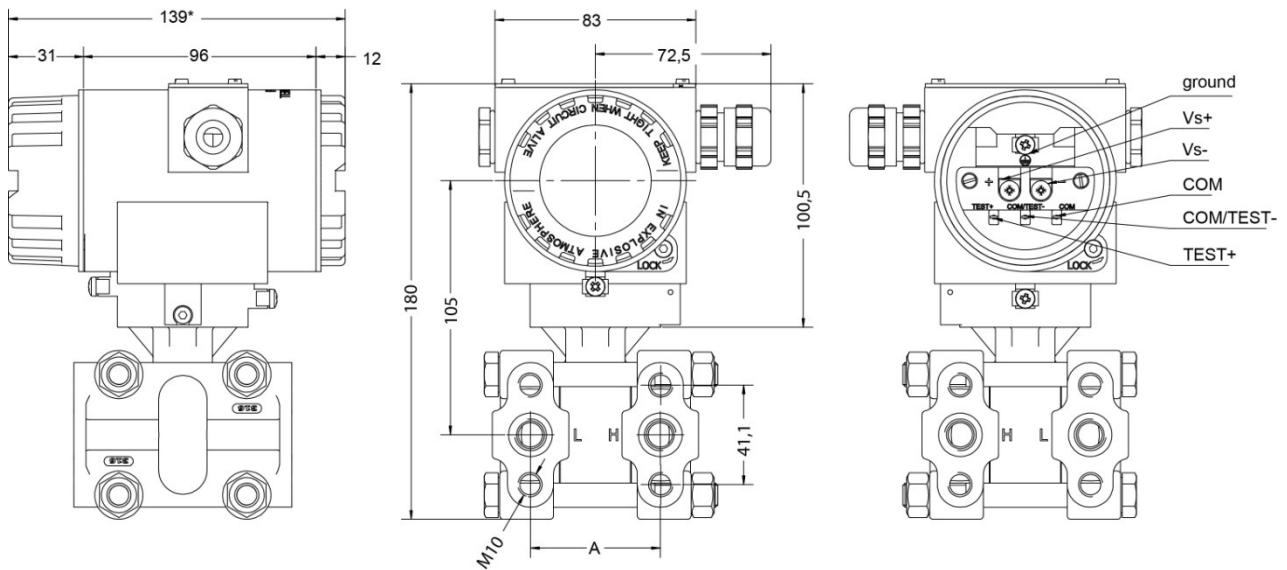
Wiring diagram



Pin configuration

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

Dimensions (in mm)²






$P_N = 0.075 \text{ bar}, 0.4 \text{ bar}, 2 \text{ bar}$: A = 54.5 ± 0.5 mm
$P_N = 7 \text{ bar}$: A = 56.0 ± 0.5 mm
$P_N = 20 \text{ bar}$: A = 56.5 ± 0.5 mm









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

² aluminium die cast case is horizontally rotatable as standard

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Windows® is a registered trade mark of Microsoft Corporation

Pressure Transmitter for Process Industry	
<p>XMP ci</p> 	<p>XMP i</p> 
<p>Characteristics</p> <ul style="list-style-type: none"> ▶ 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 <p>    </p>	<p>Characteristics</p> <ul style="list-style-type: none"> ▶ 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 <p>    </p>

Precision Pressure Transmitter for Food Industry, Pharmacy and Biotechnology	
<p>x act ci</p> 	<p>x act i</p> 
<p>Characteristics</p> <ul style="list-style-type: none"> ▶ 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 <p>    </p>	<p>Characteristics</p> <ul style="list-style-type: none"> ▶ 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 <p>    </p>

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Ordering code XMD

XMD

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Pressure												
	differential pressure	3	4	0								
Input												
	[bar]											
	0 ... 0.075	0	7	5	0							
	0 ... 0.4	4	0	0	0							
	0 ... 2	2	0	0	1							
	0 ... 7	7	0	0	1							
	0 ... 20	2	0	0	2							
	customer	9	9	9	9						consult	
Design												
	with display				A	0						
	without display				A	N						
Output												
	Intrinsic safety ia 4 ... 20 mA / 2-wire (intrinsically safe version)					I						
	with HART®-communication				1							
	Intrinsic safety d 4 ... 20 mA / 2-wire (explosion proof housing)					G						
	with HART®-communication				1							
	customer					9						consult
Accuracy												
	0.1 %					1						
Electrical connection												
	terminal clamp					A	K	0				
	customer					9	9	9				consult
Mechanical connection												
	internal thread 1/4" - 18 NPT					N	5	6				
Diaphragm												
	stainless steel 1.4435 (316L)							1				
	Hastelloy® C-276 (2.4819)							H				
	customer							9				consult
Seals												
	FKM							1				
	EPDM							3				
Special version												
	standard								0	0	0	
	customer								9	9	9	consult

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² Hastelloy® is a brand name of Haynes International Inc.

