BD|SENSORS
pressure measurement



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

BD SENSORS GmbH
BD-Sensors-Straße 1
D - 95199 Thierstein

Tel: +49 (0) 92 35 / 98 11- 0
Fax: +49 (0) 92 35 / 98 11- 11

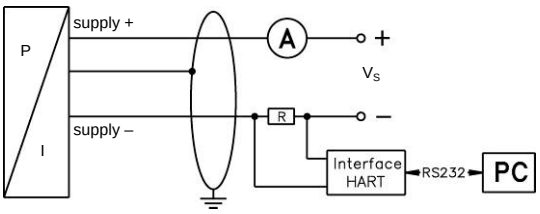
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Pressure ranges						
Nominal pressure	[bar]	0.075	0.4	2	7	20
Permissible static pressure	[bar]	130	130	130	130	130

Output signal / Supply	
Standard Option	2-wire: 4 ... 20 mA IS-intrinsically safe version with HART®-communication / V_S = 12 ... 28 V_{DC} IS version flameproof enclosure / VS = 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 Option	 stainless steel 1.4435 (316 L) 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 2G Ex ia IIB T4 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 ... 65 °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

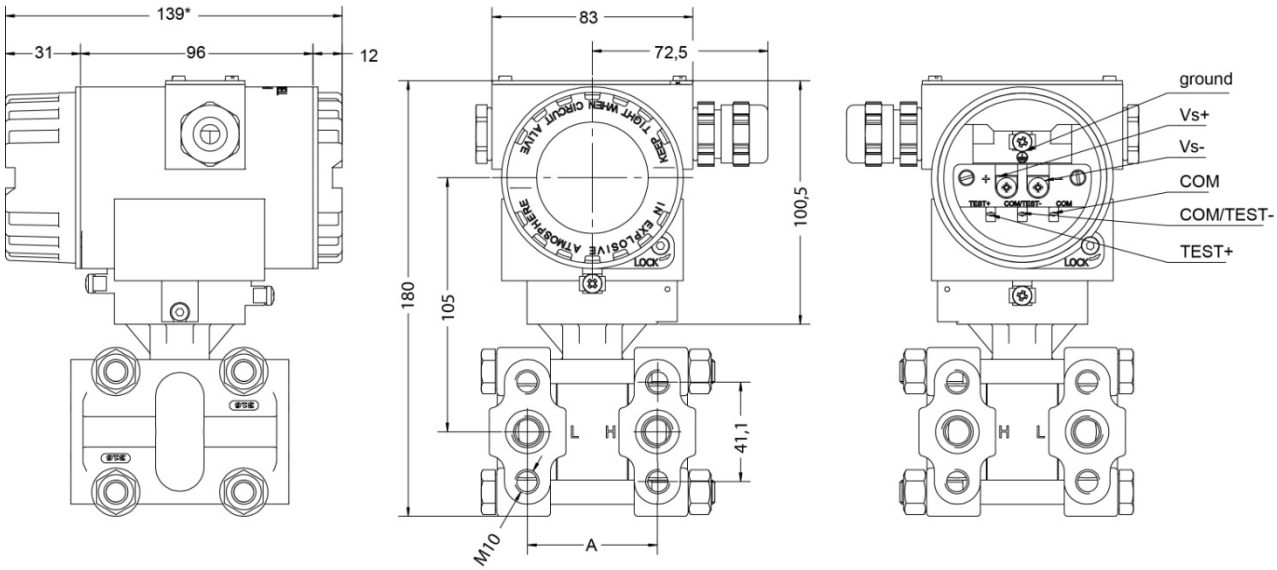
Connections	
Electrical connection	terminal clamps in clamping chamber with cable gland M20x1.5 (for cable-Ø 5 up to 14 mm)
Process connections	internal thread 1/4" - 18 NPT

Wiring diagram



Pin configuration	
Electrical connection	terminal clamps (clamp section 2.5 mm²)
Supply + (Vs+)	+
Supply – (Vs-)	-
Test +	TEST+
COM / Test –	COM/TEST-
COM	COM
Ground	⏚

Dimensions (in mm) [2]



P_N = 0,075 bar, 0,4 bar, 2 bar : A = 54,5 ± 0,5 mm
P_N = 7 bar : A = 56,0 ± 0,5 mm
P_N = 20 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

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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Tel: +49 (0) 92 35 / 98 11- 0
Fax: +49 (0) 92 35 / 98 11- 11
www.bdsensors.com
info@bdsensors.de

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Ordering code 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) with HART®-communication [1]										I																					
Intrinsic safety d 4 … 20 mA / 2-wire (explosion proof housing) with HART®-communication [1]										G																					
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) [2]																			H												
customer																			9												consult
Seals																															
FKM																					1										
EPDM																					3										
Special version																															
standard																													0	0	0	
customer																													9	9	9	consult

[1] HART® is a registered trade mark of HART Communication Foundation

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

This dokument contains product specification; properties are not guaranteed. Detailed information about options are defined in the datasheet. Subject to change without notice.

BD|SENSORS GmbH
BD-Sensors-Straße 1
D - 95199 Thierstein

Tel. +49 (0) 9235 / 98 11 - 0
Fax +49 (0) 9235 / 98 11 - 11

www.bdsensors.de
www.bdsensors.com
info@bdsensors.de