



XMP ci

Process Pressure Transmitter with HART®-communication

Ceramic Sensor

accuracy according to IEC 60770:
0.1 % FSO

Nominal pressure

from 0 ... 60 mbar up to 0... 20 bar

Output signals

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

Special characteristics

- ▶ turn-down 1:5
- ▶ two chamber aluminium die cast case or stainless field housing
- ▶ internal or flush mounted capacitive ceramic sensor
- ▶ HART®-communication
- ▶ explosion protection, intrinsic safety (ia)
- ▶ diaphragm Al₂O₃ 99.9 %

Optional versions

- ▶ explosion protection, flameproof equipment (d)
- ▶ with integrated display and operating module
- ▶ several process connections (thread, flange, DRD etc.)

The process pressure transmitter XMP ci measures the pressure of gases, steam and fluids. The special-developed capacitive ceramic sensor for this transmitter has a high overpressure capability and excellent media stability.

Several process connections e.g. thread or flange are available. The transmitter is as a standard equipped with HART®-communication, the customer can choose between a two chamber aluminium die cast case or a stainless field housing.

Preferred areas of use are



Oil and gas industry



Chemical and petrochemical industry

Preferred using in



Fuel and Oil

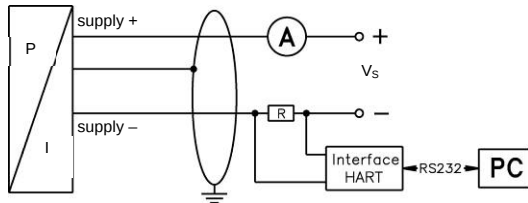


aggressive Media



Pressure ranges ¹									
Nominal pressure gauge	[bar]	0.06	0.16	0.4	1	2	5	10	20
Overpressure	[bar]	2	4	6	8	15	25	35	45
Permissible vacuum	[bar]	-0.2	-0.3	-0.5		-1			
¹ On customer request we adjust the devices by software to the required pressure ranges. Within the turn-down-possibility (starting at 0.02 bar).									
Output signal / Supply									
2-wire: 4 ... 20 mA		standard: intrinsic safety (ia) with HART®-communication					V _S = 12 ... 28 V _{DC}		
With explosion protection		option: flameproof equipment (d) with HART®-communication					V _S = 13 ... 28 V _{DC}		
Current consumption		max. 25 mA							
Performance									
Accuracy ²		nominal pressure < 1 bar: ≤ ± 0.2 % FSO							
		nominal pressure ≥ 1 bar: ≤ ± 0.1 % FSO							
		for nominal pressure ranges: from 0.06 bar up to 0.4 bar				≤ ± (0.2 + (TD-1) x 0.02) % FSO			
		for nominal pressure ranges: from 1 bar up to 20 bar				≤ ± (0.1 + (TD-1) x 0.01) % FSO			
		with turn-down = nominal pressure range / adjusted range							
Permissible load		R _{max} ≤ [(V _S – V _{Smin}) / 0.02 A] Ω					load during HART®-communication: R _{min} = 250 Ω		
Influence effects		supply: 0.05 % FSO / 10 V					permissible load: 0.05 % FSO / kΩ		
Long term stability		≤ ± 0.1 % FSO / year							
Response time		200 msec – without consideration of electronic damping					measuring rate 5/sec		
Adjustability		electronic damping: 0 ... 100 sec offset 0 ... 80 % FSO; turn-down of span: max. 1:5 (span min. 0.02 bar)							
² accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)									
Thermal errors / Permissible temperatures									
Thermal error		≤ ± (0.02 x turn-down) % FSO / 10 K in compensated range -20 ... 80 °C							
Permissible temperatures ³		without display:		medium: -25 ... 125 °C		environment: -40 ... 70 °C		storage: -40 ... 80° C	
		with display:		medium: -25 ... 125 °C		environment: -20 ... 70 °C		storage: -30 ... 80° C	
³ for pressure port of PVDF the minimum permissible temperature is -25...60 °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 (20 ... 2000 Hz)							
Shock		100 g / 11 msec							
Materials									
Pressure port		stainless steel 1.4404 (316L) PVDF							
Standard									
Optionally for G1 1/2" flush									
Housing		aluminium die cast, powder-coated or stainless steel 1.4404 (316L)							
Cable gland		brass, nickel plated							
Viewing glass		laminated safety glass							
Seals (media wetted)		FKM EPDM others on request							
Diaphragm		ceramics Al ₂ O ₃ 99.9 %							
Media wetted parts		pressure port, seal, diaphragm							
Explosion protection									
Approval AX2-XMP ci		intrinsically safe version IBExU 05 ATEX 1106 X							
		stainless steel field housing zone 0/1 ⁴ : II 1G Ex ia IIC T4 Ga II 1/2G Ex ia IIC T4 Ga/Gb II 2G Ex ia IIC T4 Gb				aluminium die cast case zone 1 ⁵ : II 1/2G Ex ia IIB T4 Ga/Gb II 2G Ex ia IIB T4 Gb			
		zone 20: II 1D Ex ia IIIC T85 °C Da							
		Safety techn. 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 AX7-XMP ci		flameproof enclosure with aluminium die cast case IBExU 12 ATEX1045 X zone 1: II 2G Ex db IIC T5 Gb							
Permissible temperatures for environment		in zone 0: -20 ... 60 °C with p _{atm} 0.8 bar up to 1.1 bar in zone 1: -40 ... 70° C (intrinsically safe version)					-20 ... 70 °C (flameproof enclosure)		
⁴ The designation depends on the nominal pressure range. Nominal pressure ranges ≤60 mbar are marked with „2G“. Nominal pressure ranges > 60 mbar and ≤10 bar are marked with „1/2G“. Nominal pressure ranges > 10 bar are marked with „1G“.									
⁵ The designation depends on the nominal pressure range. Nominal pressure ranges < 60 mbar are marked with „2G“. Nominal pressure ranges ≥ 160 mbar are marked with „1/2G“.									

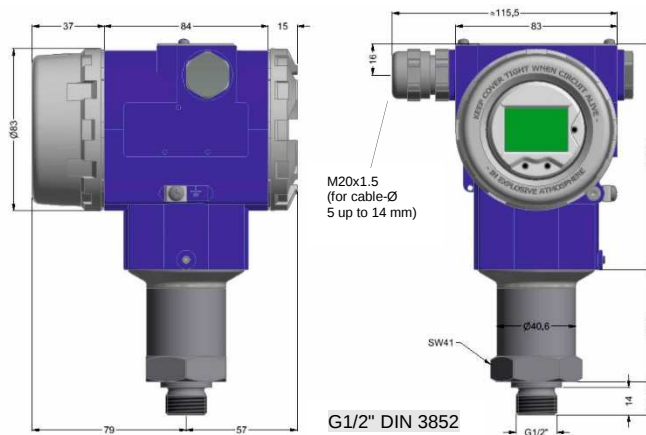
Miscellaneous	
Display (optionally)	LC-display, visible range 32.5 x 22.5 mm; 5-digit 7-segment main display, digit height 8 mm, range of indication ± 9999 ; 8-digit 14-segment additional display, digit height 5 mm; 52-segment bargraph; accuracy 0.1% ± 1 digit
Ingress protection	IP 67
Installation position	any
Weight	min. 400 g (depending on housing and mechanical connection)
Operational life	> 100 x 10 ⁶ pressure cycles
CE-conformity	EMC Directive: 2014/30/EU
ATEX Directive	2014/34/EU
Wiring diagram	



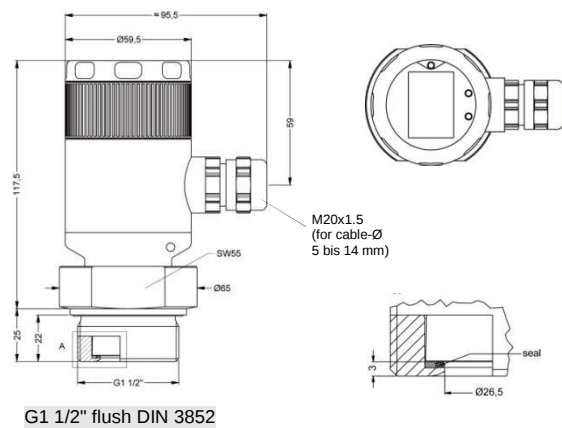
Pin configuration		
Electrical connections	aluminium die cast case: terminal clamps (clamp section: 2.5 mm ²)	stainless steel field housing: terminal clamps (clamp section: 1.5 mm ²)
Supply +	IN+	IN+
Supply -	IN-	IN-
Test	Test	-
Shield		

Housing designs ⁵ (dimensions in mm)

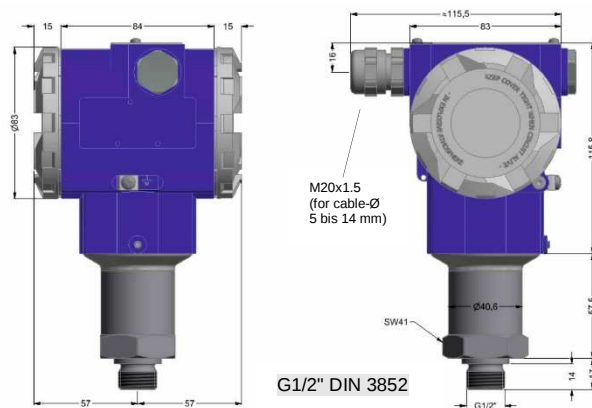
aluminium die cast case with display



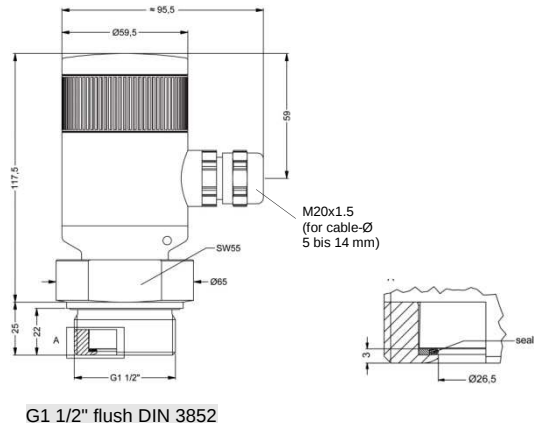
stainless steel field housing with display



aluminium die cast case without display

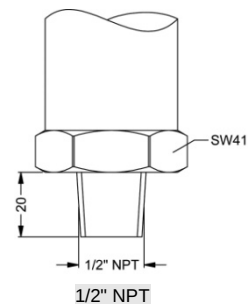
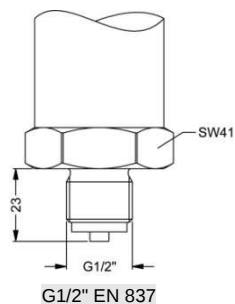
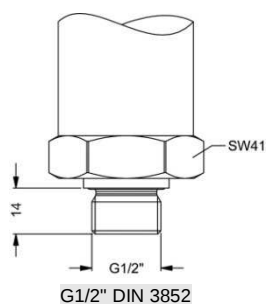


stainless steel field housing without display



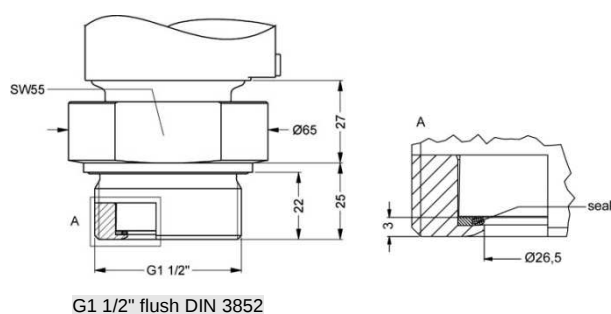
⁵ aluminium die cast case is horizontally rotatable as standard

Standard pressure ports (dimensions in mm)

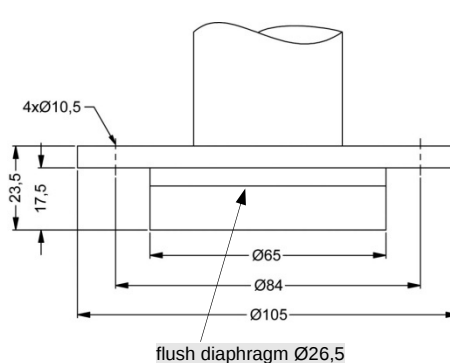


Process connections (dimensions in mm)

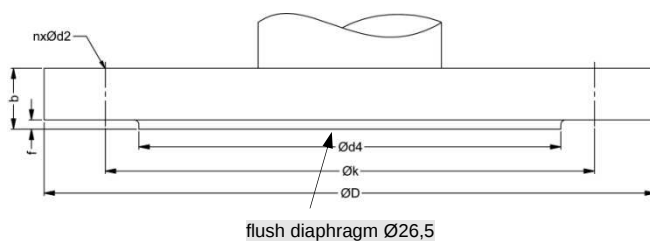
Inch thread



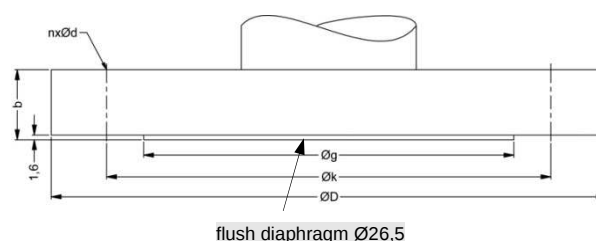
DRD⁶



Flange (DIN 2501)



Flange (ANSI)



dimensions in mm			
size	DN25	DN50	DN80
D	115	165	200
k	85	125	160
d4	68	102	138
b	18	20	20
f	2	3	3
n	4	4	8
d2	14	18	18
P _N	≤ 40 bar	≤ 40 bar	≤ 16 bar

dimensions in mm		
size	2"/150 lbs	3"/150 lbs
D	152.4	190.5
g	91.9	127
k	120.7	152.4
b	19.1	23.9
n	4	4
d	19.1	19.1
P _N	≤ 10 bar	≤ 10 bar

⁶ mounting flange is included in the delivery (already pre-assembled)
HART® is a registered trade mark of HART Communication Foundation;
Windows® is a registered trade mark of Microsoft Corporation

Accessories for aluminium cast (not a part of delivery)

Electrical connection Ex i (standard)		Electrical connection Ex d (flameproof enclosure)	
Ordering type	Ordering code	Ordering type	Ordering code
plug thread M20x1,5	1001871	plug thread M20x1,5	1001438
cable gland thread M20x1.5	1001460	cable gland thread M20x1.5	1001870

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

Ordering code XMP ci

3.4.2020

XMP ci

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Pressure														
Gauge	5	1	E											
Input [bar]														
0 ... 0,06				0	6	0	0							
0 ... 0,16				1	6	0	0							
0 ... 0,4				4	0	0	0							
0 ... 1				1	0	0	1							
0 ... 2				2	0	0	1							
0 ... 5				5	0	0	1							
0 ... 10				1	0	0	2							
0 ... 20				2	0	0	2							
Customer				9	9	9	9							
Design														
Aluminium housing - with display (IP 67)								A	0					
Aluminium housing - without display (IP 67)								A	N					
Stainless steel field housing - with display (IP 67)								F	V					
Stainless steel field housing - without display (IP 67)								F	N					
Output														
HART® - 4 ... 20 mA / 2-wire									H					
HART® - Intrinsic safety Ex ia 4 ... 20 mA / 2-wire									I					
HART® - Flameproof equipment Ex d 4 ... 20 mA / 2-wire (only with A0, AN)									G					
Customer									9					
Accuracy														
0,1 % (P _N ≥ 1 bar)									1					
0,1 % including Calibration Certificate (P _N ≥ 1 bar)									P					
0,2 % (P _N < 1 bar)									B					
0,2 % including Calibration Certificate (P _N < 1 bar)									Q					
Customer									9					
Electrical connection														
Terminal clamp - Aluminium housing								A	K	0				
Terminal clamp - Stainless Steel field housing								8	8	0				
Customer								9	9	9				
Mechanical connection														
G 1/2" DIN 3852										1	0	0		
G 1/2" EN 837										2	0	0		
G 1/2" DIN 3852 - open port										H	0	0		
1/2" NPT										N	0	0		
G 1 1/2" DIN 3852										M	0	0		
Dairy pipe DIN 11851 DN 40										M	7	5		
Dairy pipe DIN 11851 DN 50										M	7	6		
Flange DN 80/PN16 DIN 2501										F	1	4		
Flange DN 25/PN40										F	2	0		
Flange DN 40/PN40 DIN 2501										F	2	2		
Flange DN 50/PN40										F	2	3		
DRD Ø 65 mm										D	R	D		
Customer										9	9	9		
Diaphragm														
Ceramic Al ₂ O ₃ 96 %											2			
Ceramic Al ₂ O ₃ 99,9 %											C			
Customer											9			
Seals														
Viton (FKM)											1			
EPDM											3			
Customer											9			
Pressure port														
Stainless steel 1.4404 (316 L)											1			
PVDF (only for mech.connection M00)											B			
Customer											9			
Special version														
Standard												0	0	0
Temperature compensation -20 ... 80 °C												1	1	7
Standard												9	9	9

Accessories for Aluminium housing Electrical connection Ex ia (standard)

Blind flange Ex ia (M20x1,5 thread)	1001871
Cable gland Ex ia (M20x1,5 thread)	1001460



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The company BD SENSORS s.r.o. is certified by TÜV SÜD Czech according to the standard ISO 9001.

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Electrical connection Ex D (standard)	
Blind flange Ex D (M20x1,5 thread)	1001438
Cable gland Ex D (M20x1,5 thread)	1001870
Mounting bracket	
Universal holder (for pipes $\varnothing \leq 26,5$ mm)	5020043

0,- ... without additional charge

On request ... in accordance with the producer

!!! When you make an order it is necessary to fill the questionnaire for transmitters with separators!!!!

Surcharges for calibration are not subject to any discounts. Subject to change. □

This document contains the specification for ordering the product; detailed technical parameters of the product and its possible variants are given in the data sheet.

BD SENSORS reserves the right to change sensor specifications without further notice.



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