



# XMP ci

## Process Pressure Transmitter with HART<sup>®</sup>-communication

Ceramic Sensor

accuracy according to EN IEC 62828-2:  
0.1 % span

### 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 5:1
- ▶ two chamber aluminium die cast case or stainless field housing
- ▶ internal or flush mounted capacitive ceramic sensor
- ▶ HART<sup>®</sup>-communication
- ▶ explosion protection, intrinsic safety (ia)
- ▶ diaphragm Al<sub>2</sub>O<sub>3</sub> 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<sup>®</sup>-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



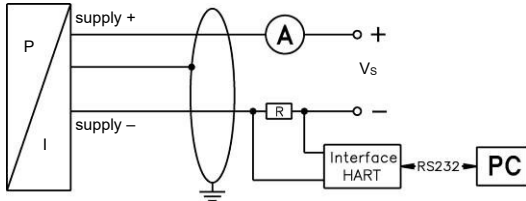
# XMP ci

## Process Pressure Transmitter

Pressure ranges <sup>1</sup>									
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		
<sup>1</sup> 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 <sub>S</sub> = 12 ... 28 V <sub>DC</sub>	
With explosion protection		option: flameproof equipment (d) with HART®-communication						V <sub>S</sub> = 13 ... 28 V <sub>DC</sub>	
Current consumption		max. 25 mA							
Performance									
Accuracy <sup>2</sup>		nominal pressure < 1 bar: ≤ ± 0.2 % span							
		nominal pressure ≥ 1 bar: ≤ ± 0.1 % span							
		for nominal pressure ranges: from 0.06 bar up to 0.4 bar	≤ ± (0.2 + (TD-1) x 0.02) % span						
		for nominal pressure ranges: from 1 bar up to 20 bar	≤ ± (0.1 + (TD-1) x 0.01) % span						
		with turn-down = nominal pressure range / adjusted range							
Permissible load		R <sub>max</sub> ≤ [(V <sub>S</sub> - V <sub>S min</sub> ) / 0.02 A] Ω				load during HART®-communication: R <sub>min</sub> = 250 Ω			
Influence effects		supply: 0.05 % span / 10 V				permissible load: 0.05 % span / kΩ			
Long term stability		≤ ± 0.1 % span / year							
Response time		200 msec – without consideration of electronic damping						measuring rate 5/sec	
Adjustability		electronic damping: 0 ... 100 sec							
		offset 0 ... 80 % span; turn-down of span: max. 5:1 (span min. 0.02 bar)							
<sup>2</sup> accuracy according to EN IEC 62828-2– limit point adjustment (non-linearity, hysteresis, repeatability)									
Thermal errors / Permissible temperatures									
Thermal error		≤ ± (0.02 x turn-down) % span / 10 K in compensated range -20 ... 80 °C							
Permissible temperatures <sup>3</sup>		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			
<sup>3</sup> 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)							
Standard		PVDF							
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 <sub>2</sub> O <sub>3</sub> 99.9 %							
Media wetted parts		pressure port, seal, diaphragm							
Explosion protection									
Approval AX2-XMP ci		<b>intrinsically safe version</b> IExU05ATEX1105 X							
		stainless steel field housing				aluminium die cast case			
		zone 0/1 <sup>4</sup> : II 1G Ex ia IIC T4 Ga				zone 1 <sup>5</sup> : II 1/2G Ex ia IIB T4 Ga/Gb			
		II 1/2G Ex ia IIC T4 Ga/Gb				II 2G Ex ia IIB T4 Gb			
		II 2G Ex ia IIC T4 Gb							
		Safety techn. maximum values				Safety techn. maximum values			
		U <sub>i</sub> = 28 V, I <sub>i</sub> = 98 mA, P <sub>i</sub> = 680 mW, C <sub>i</sub> = 0 nF, L <sub>i</sub> = 0 μH, C <sub>GND</sub> = 27 nF				U <sub>i</sub> = 28 V, I <sub>i</sub> = 98 mA, P <sub>i</sub> = 680 mW, C <sub>i</sub> = 0 nF, L <sub>i</sub> = 0 μH, C <sub>GND</sub> = 33 nF			
		zone 20: II 1D Ex ia IIIC T85 °C Da							
Approval AX7-XMP ci		<b>flameproof enclosure</b> with aluminium die cast case IExU12ATEX1073 X							
		zone 1: II 2G Ex db IIC T5 Gb							
Permissible temperatures for environment		in zone 0: -20 ... 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar							
		in zone 1: -40 ... 70 °C (intrinsically safe version)				-20 ... 70 °C (flameproof enclosure)			
<sup>4</sup> 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“.									
<sup>5</sup> 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 $\pm 9999$ ; 8-digit 14-segment additional display, digit height 5 mm; 52-segment bargraph; accuracy 0.1% $\pm$ 1 digit
Ingress protection	IP 67
Installation position	any
Weight	min. 400 g (depending on housing and mechanical connection)
Operational life	> 100 x 10 <sup>6</sup> pressure cycles
CE-conformity	EMC Directive: 2014/30/EU
ATEX Directive	2014/34/EU

### Wiring diagram

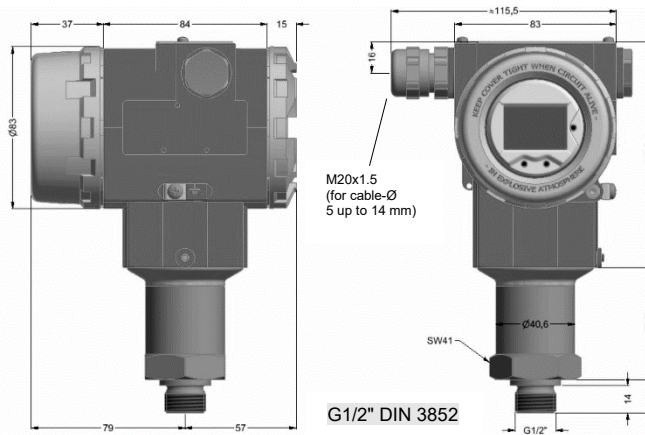


### Pin configuration

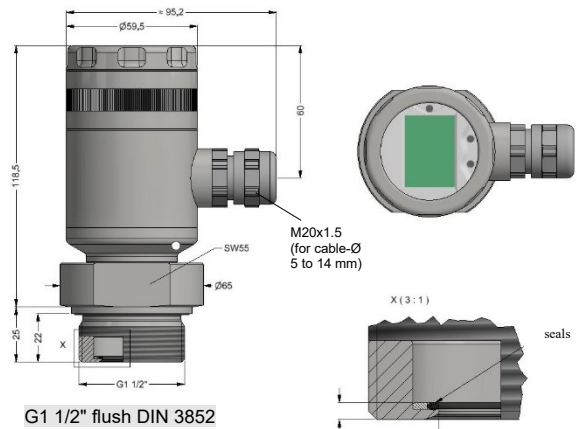
Electrical connections	aluminium die cast case: terminal clamps (clamp section: 2.5 mm <sup>2</sup> )	stainless steel field housing: terminal clamps (clamp section: 1.5 mm <sup>2</sup> )
Supply +	IN+	IN+
Supply -	IN-	IN-
Test	Test	-
Shield		

### Housing designs <sup>5</sup> (dimensions in mm)

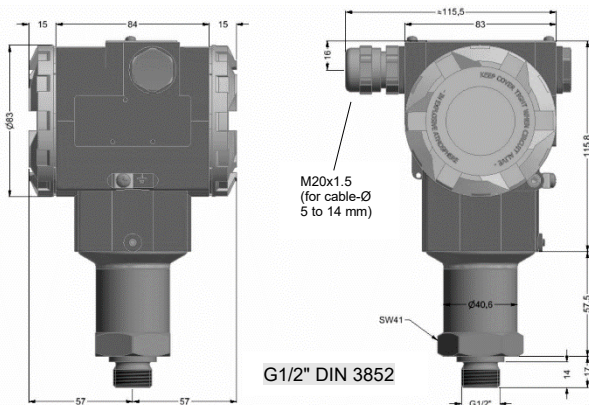
#### aluminium die cast case with display



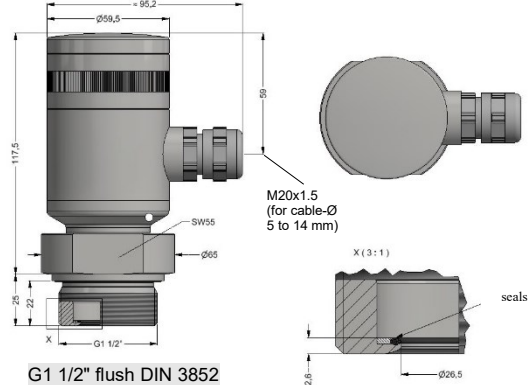
#### stainless steel field housing with display



#### aluminium die cast case without display



#### stainless steel field housing without display

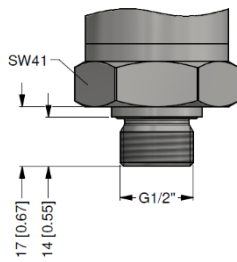


<sup>5</sup> aluminium die cast case is horizontally rotatable as standard

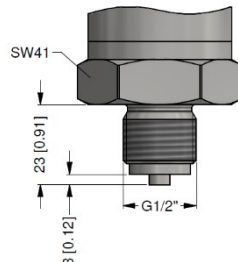
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Process Pressure Transmitter

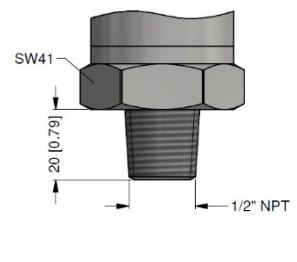
## Standard pressure ports (dimensions in mm)



G1/2" DIN 3852



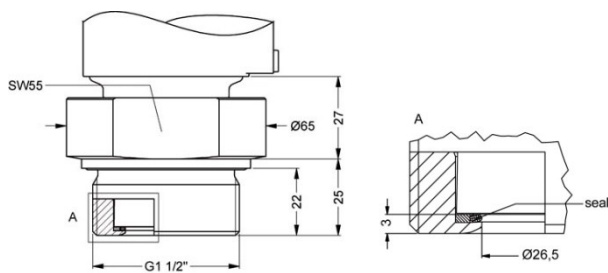
G1/2" EN 837



1/2" NPT

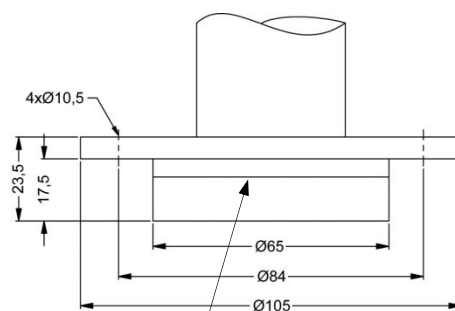
## Process connections (dimensions in mm)

### Inch thread



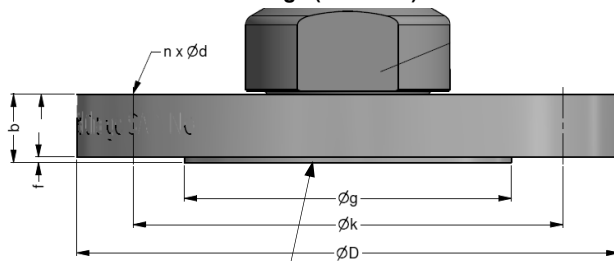
G1 1/2" flush DIN 3852

### DRD<sup>6</sup>



flush diaphragm Ø26,5

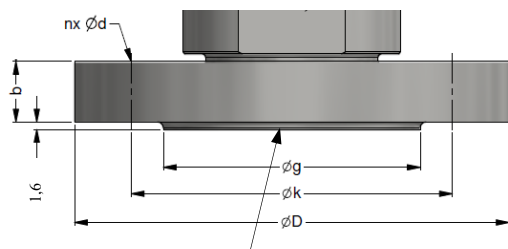
### Flange (DIN 2501)



flush diaphragm Ø26,5

DIN 2501 dimensions in mm			
size	DN25	DN50	DN80
D	115	165	200
k	85	125	160
g	68	102	138
b	18	20	20
f	2	3	3
n	4	4	8
d	14	18	18
P <sub>N</sub>	≤ 40 bar	≤ 40 bar	≤ 16 bar

### Flange (ANSI)



flush diaphragm Ø26,5

ANSI 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 <sub>N</sub>	≤ 10 bar	≤ 10 bar

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

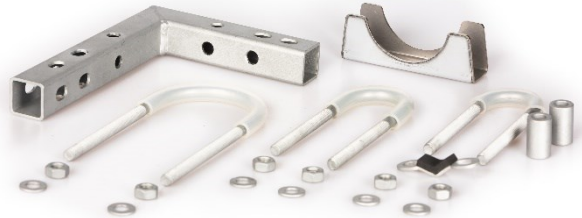
This data sheet contains product specification. properties are not guaranteed. Subject to change without notice.

### Universal holder

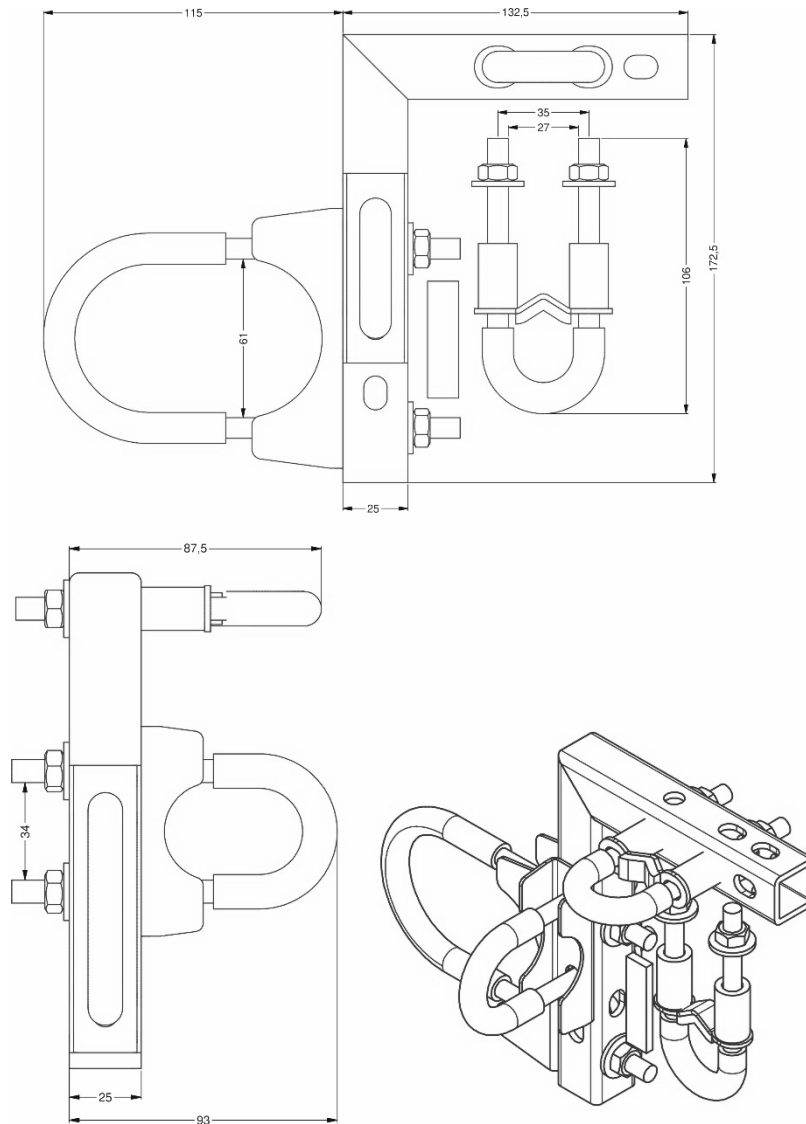
Weight	cca 1 kg
Material	0308 (E235)
Surface finish	BIS UltraProtect 1000
Ordering code	5020043



### Accessories for i communication



### Dimensions (in mm)



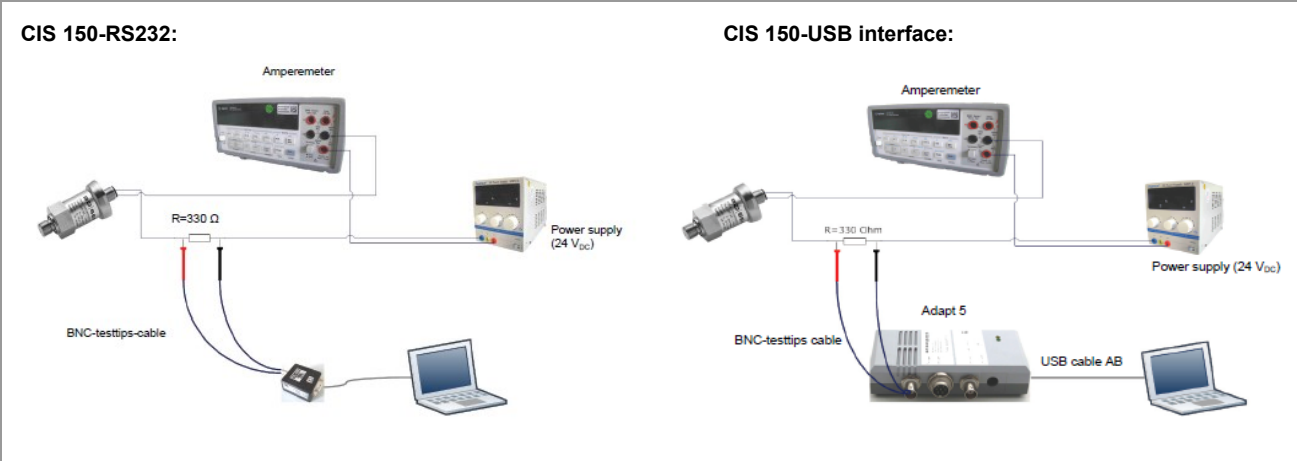
**Programming kits for HART®-devices: CIS 150-RS232 and CIS 150-USB**



Package contents	<p>Programming software "Config 3.0" on CD operating manual</p> <p><b>CIS 150-RS232:</b> HART® modem (MH-02 Manufacturer: JSP NOVÁ PAKA) connecting cable BNC-Testtip (for measuring device) 9-pin connecting cable RS232 (for PC)</p> <p><b>CIS 150-USB:</b> Adapt 5 connecting cable BNC-Testtip (for measuring device) USB connecting cable – Type A to Type B – (for PC)</p>
System requirement	For the installation of the software, a Windows® PC (95, 98, ME, 2000, NT, XP) with serial interface (RS 232) or USB-interface is required

**Please read the operating manual carefully before installing and starting up the programming kit.**

**Wiring diagrams**



**Ordering codes**

<b>Version:</b>	<b>Ordering code:</b>
HART(R) modem with RS232 connection cable for PC	CIS 150-RS232
Adapt 5 with USB connection cable for PC	CIS 150-USB

*Windows® is a registered trade mark of Microsoft Corporation*

ORD. Code XMP ci

23.08.2024

XMP ci

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<b>Pressure</b>																									
Gauge	5	1	E																						
<b>Input [bar]</b>																									
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																		
<b>Design</b>																									
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					
<b>Output</b>																									
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) <sup>1</sup>																				G					
Customer																				9					
<b>Accuracy</b>																									
0,1 % (P <sub>N</sub> ≥ 1 bar)																				1					
0,1 % including Calibration Certificate (P <sub>N</sub> ≥ 1 bar)																				P					
0,2 % (P <sub>N</sub> < 1 bar)																				B					
0,2 % including Calibration Certificate (P <sub>N</sub> < 1 bar)																				Q					
Customer																				9					
<b>Electrical connection</b>																									
Terminal clamp - Aluminium housing																				A	K	0			
Terminal clamp - Stainless Steel field housing																				8	8	0			
Customer																				9	9	9			
<b>Mechanical connection</b>																									
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		
M 20 x 1,5 EN 837																					8	0	0		
Dairy pipe DIN 11851 DN 40																					M	7	5		
Dairy pipe DIN 11851 DN 50																					M	7	6		
Flange DN 80/PN 16 DIN 2501																					F	1	4		
Flange DN 25/PN 40 DIN 2501																					F	2	0		
Flange DN 40/PN 40 DIN 2501																					F	2	2		
Flange DN 50/PN 40 DIN 2501																					F	2	3		
DRD Ø 65 mm <sup>2</sup>																					D	R	D		
Customer																					9	9	9		
<b>Diaphragm</b>																									
Ceramic Al <sub>2</sub> O <sub>3</sub> 96 %																						2			
Ceramic Al <sub>2</sub> O <sub>3</sub> 99,9 %																							C		
Customer																							9		
<b>Seals</b>																									
Viton (FKM)																							1		
EPDM																							3		
Customer																							9		
<b>Pressure port</b>																									
Stainless steel 1.4404 (316 L)																							1		
PVDF (only for mech.connection M00) <sup>3</sup>																							B		
Customer																							9		
<b>Special version</b>																									
Standard																							0	0	0
Version for oxygen																							0	0	7
Temperature compensation -20 ... 80 °C																							1	1	7
Standard																							9	9	9



<b>Accessories for Aluminium housing</b>	
<b>Electrical connection Ex ia (standard)</b>	
Blind flange Ex ia (M20x1,5 thread)	1001871
Cable gland Ex ia (M20x1,5 thread)	1001460
<b>Electrical connection Ex D (standard)</b>	
Blind flange Ex D (M20x1,5 thread)	1001438
Cable gland Ex D (M20x1,5 thread)	1001870
<b>Mounting bracket</b>	
Universal holder (for pipes $\varnothing \leq 26,5$ mm)	5020043
<b>Accessories</b>	
HART® modem HM02 + USB including SW CONFIG	5031837

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.

**if setting range shall be different from nominal range please specify in your order**

1 only possible in combination with aluminium die cast case

2 mounting flange is included in the delivery (already pre-assembled)

3 for pressure port in PVDF the operation medium temperature is -25 ... 60 °C

