



XMP ci

Process Pressure Transmitter with HART®-communication

Ceramic Sensor

accuracy according to IEC 60770:
0.1 % FSO

Nominal pressure

from 0 ... 160 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
- ▶ IS-version:
Ex ia = intrinsically safe version
- ▶ diaphragm Al₂O₃ 99.9 %

Optional versions

- ▶ IS-version:
Ex d = flameproof enclosure
- ▶ 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



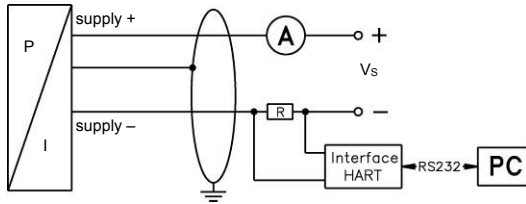
Aggressive media



Pressure ranges ¹								
Nominal pressure gauge	[bar]	0.16	0.4	1	2	5	10	20
Overpressure	[bar]	4	6	8	15	25	35	45
Permissible vacuum	[bar]	-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								
Standard	2-wire: 4 ... 20 mA	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}		
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 0.16 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 _{S min}) / 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 at reference conditions							
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 -30°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)		according to DIN EN 60068-2-6					
Shock	100 g / 11 msec		according to DIN EN 60068-2-27					
Materials								
Pressure port	standard: stainless steel 1.4404 (316L) optionally for G1 1/2" flush: PVDF							
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 (permissible temperature: -25 ... 125 °C) EPDM (permissible temperature: -40 ... 125 °C)				others on request			
Diaphragm	ceramics Al ₂ O ₃ 99.9 %							
Media wetted parts	pressure port, seal, diaphragm							
Explosion protection								
Approval AX12-XMP ci IBExU 05 ATEX 1106 X (intrinsically safe version)	stainless steel field housing zone 0/1 ⁴ :			aluminium die cast case zone 1 ⁵ :				
	II 1G Ex ia IIC T4 Ga II 1/2G Ex ia IIC T4 Ga/Gb II 2G Ex ia IIC T4 Gb zone 20: II 1D Ex ia IIIC T85 °C Da			II 1/2G Ex ia IIB T4 Ga/Gb II 2G Ex ia IIB T4 Gb				
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 AX17-XMP ci IBExU 12 ATEX 1045 X (flameproof enclosure)	aluminium die cast case: zone 1: II 2G Ex d 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 or higher: intrinsically safe version: -40 ... 70 °C flameproof enclosure: -20 ... 70 °C ()							
⁴ The designation depends on the nominal pressure range. Nominal pressure ranges ≤160 mbar are marked with „2G“. Nominal pressure ranges > 160 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 < 160 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 million load cycles
CE-conformity	EMC Directive: 2014/30/EU
ATEX Directive	2014/34/EU

Wiring diagram

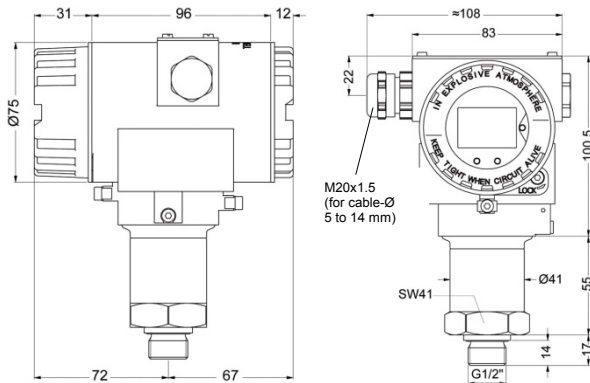


Pin configuration

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	⏏	⏏

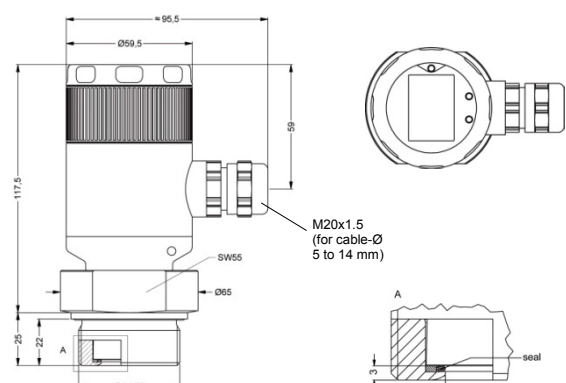
Housing designs ⁶ (dimensions in mm)

aluminium die cast case with display



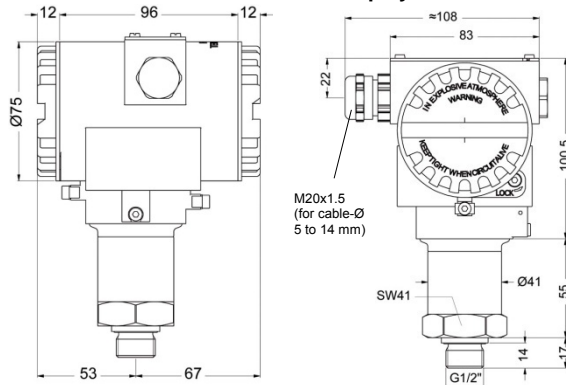
G1/2" DIN 3852

stainless steel field housing with display



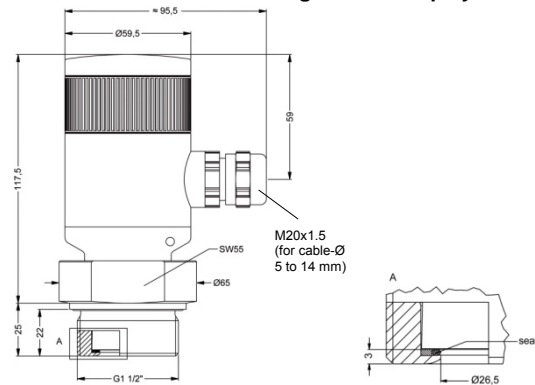
G1 1/2" flush DIN 3852

aluminium die cast case without display



G1/2" DIN 3852

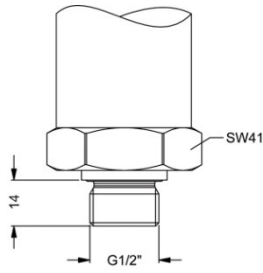
stainless steel field housing without display



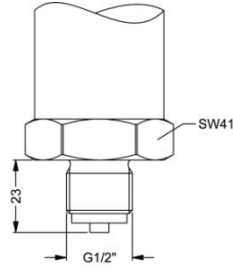
G1 1/2" flush DIN 3852

⁶ aluminium die cast case is horizontally rotatable as standard

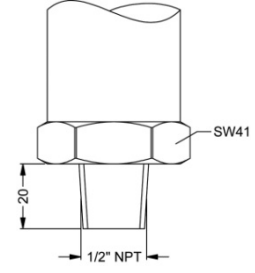
Standard pressure ports (dimensions in mm)



G1/2" DIN 3852



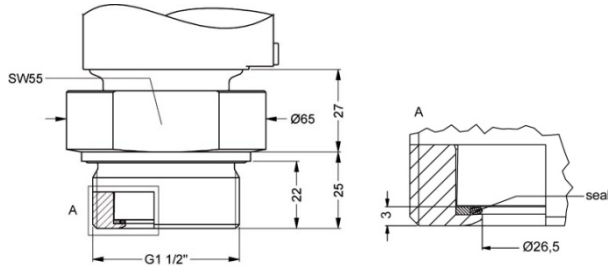
G1/2" EN 837



1/2" NPT

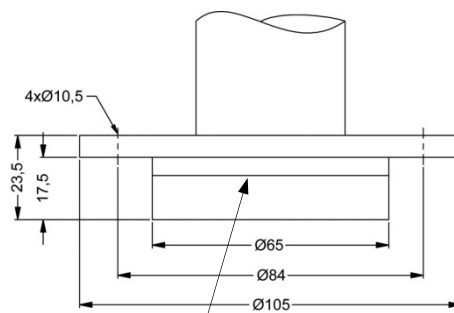
Process connections (dimensions in mm)

Inch thread



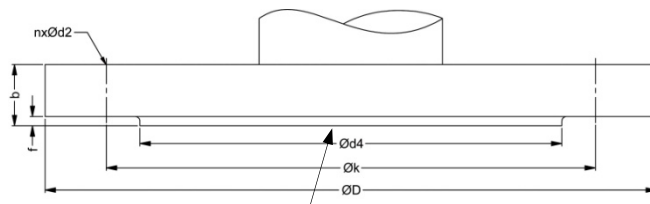
G1 1/2" flush DIN 3852

DRD⁷



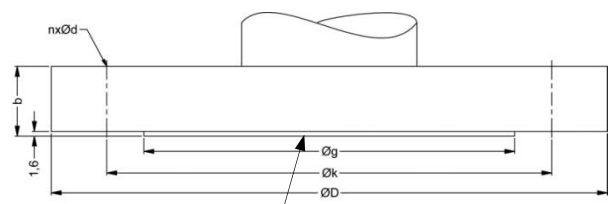
flush diaphragm Ø26.5

Flange (DIN 2501)



flush diaphragm Ø26.5

Flange (ANSI)



flush diaphragm Ø26.5

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

⁷ mounting flange is included in the delivery (already pre-assembled)

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Windows® is a registered trade mark of Microsoft Corporation

Ordering code XMP ci

XMP ci

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Pressure																				
	gauge	5	1	E																
Input		[bar]																		
		0.16	1	6	0	0														
		0.4	4	0	0	0														
		1	1	0	0	1														
		2	2	0	0	1														
		5	5	0	0	1														
		10	1	0	0	2														
		20	2	0	0	2														
	customer		9	9	9	9														consult
Design																				
Aluminium die cast case																				
	with display																	A	0	
	without display																	A	N	
Stainless steel field housing																				
	with display																	F	V	
	without display																	F	N	
	customer																	9	9	consult
Output																				
	Intrinsic safety 4 ... 20 mA / 2-wire with HART®-communication																			I
	Intrinsic safety d 4 ... 20 mA / 2-wire (flameproof enclosure) with HART®-communication ¹																			G
	customer																			9
Accuracy																				
	P _N < 1 bar:	0.2 %																		B
	P _N ≥ 1 bar:	0.1 %																		1
	customer																			9
Electrical connection																				
	terminal clamp alu housing																			A K 0
	terminal clamp field housing																			8 8 0
	customer																			9 9 9
Mechanical connection																				
<i>standard pressure connections:</i>																				
	G1/2" DIN 3852																			1 0 0
	G1/2" EN 837																			2 0 0
	1/2" NPT																			N 0 0
<i>process connections:</i>																				
	G 1 1/2" DIN flush (DIN 3852)																			M 0 0
	Flange DN 25 / PN 40 (DIN 2501)																			F 2 0
	Flange DN 50 / PN 40 (DIN 2501)																			F 2 3
	Flange DN 80 / PN 16 (DIN 2501)																			F 1 4
	Flansch DN 2" / 150 lbs (ANSI B16.5) ²																			F 3 2
	Flansch DN 3" / 150 lbs (ANSI B16.5) ²																			F 3 3
	DRD Ø 65 mm ³																			D R D
	customer																			9 9 9
Diaphragm																				
	Ceramics Al ₂ O ₃ 99,9%																			C
	customer																			9
Seals																				
	FKM ⁴																			1
	EPDM ⁴																			3
	customer																			9
Pressure port																				
<i>standard:</i>																				
	Stainless steel 1.4404 (316L)																			1
<i>option for G 1 1/2" flush:</i>																				
	PVDF ⁴																			B
	customer																			9
Special version																				
	standard																			0 0 0
	customer																			9 9 9

⚠ 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 2"/150 lbs and 3"/150 lbs only possible for nominal pressure ranges PN ≤ 10 bar

³ mounting flange is included in the delivery (already pre-assembled)

⁴ permissible temperature FKM -25 ... 125 °C, EPDM -40 ... 125 °C, PVDF -30 ... 125 °C

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