



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
- ▶ 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



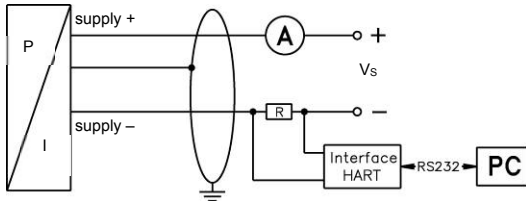
Aggressive media



Pressure ranges ¹								
Nominal pressure gauge	[bar]	0.16	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								
2-wire: 4 ... 20 mA with explosion protection		standard: intrinsic safety (ia) with HART®-communication				V _S = 12 ... 28 V _{DC}		
		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 0.16 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		intrinsic safety 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 zone 20: II 1D Ex ia IIIC T85 °C Da		aluminium die cast case: zone 0/1 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 AX17-XMP ci		flameproof enclosure with aluminium die cast case IBExU 12 ATEX 1045 X 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: intrinsic safety: -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-segement 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

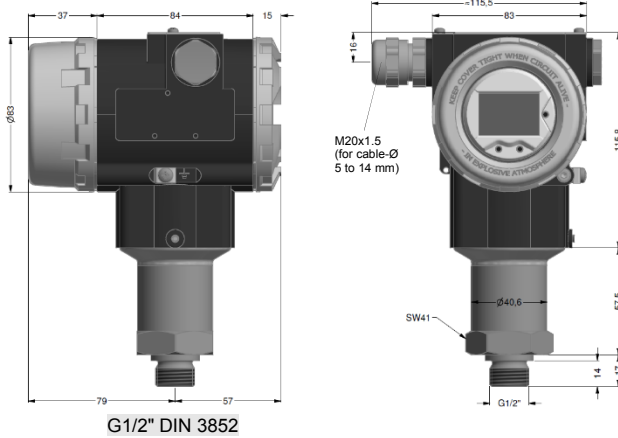


Pin configuration

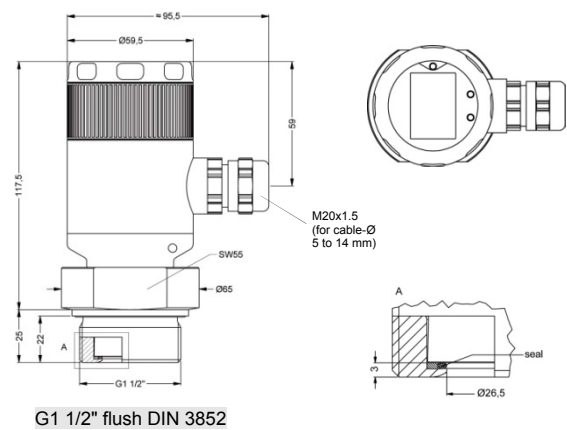
Electrical connections	aluminium die cast case: terminal clamps (clamp section: 2.5 mm ²)	stainless steel field housing: terminal clamps (clamp section: 1.5 mm ²)
Supply +	IN+	IN+
Supply -	IN-	IN-
Test	Test	-
Shield	⊕	⊕

Housing designs ⁶ (dimensions in mm)

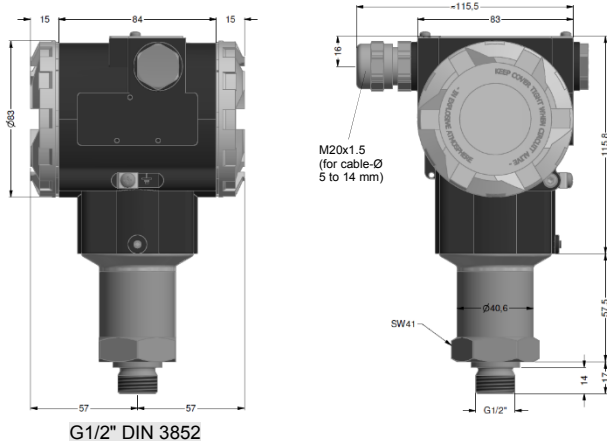
aluminium die cast case with display



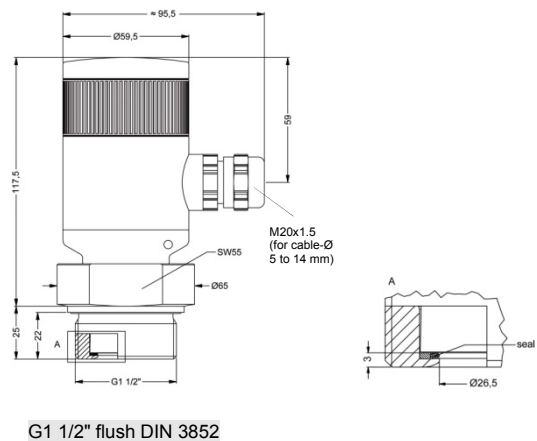
stainless steel field housing with display



aluminium die cast case without display

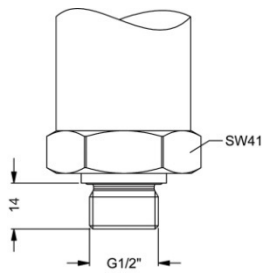


stainless steel field housing without display

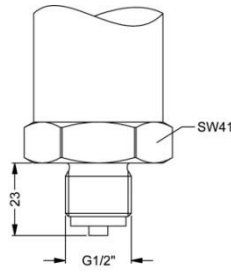


⁶ aluminium die cast case is horizontally rotatable as standard

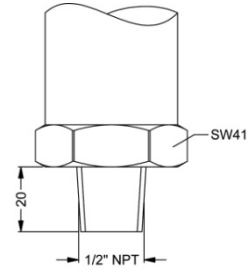
Standard pressure ports (dimensions in mm)



G1/2" DIN 3852



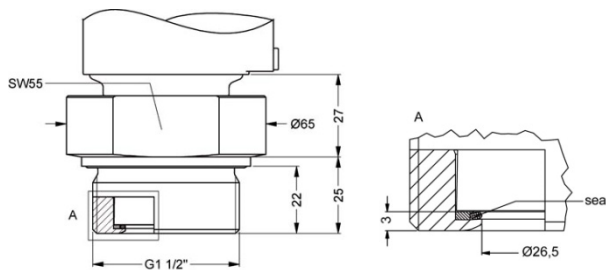
G1/2" EN 837



1/2" NPT

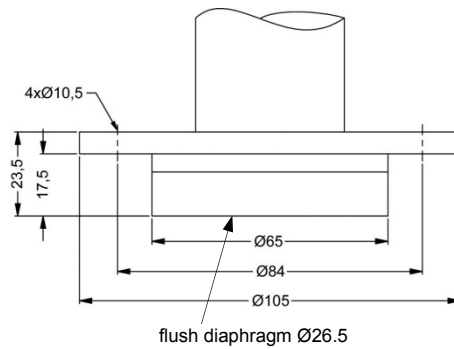
Process connections (dimensions in mm)

Inch thread



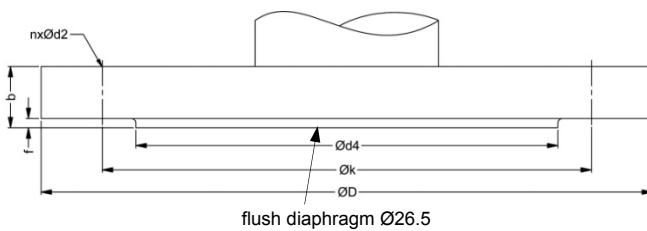
G1 1/2" flush DIN 3852

DRD⁷



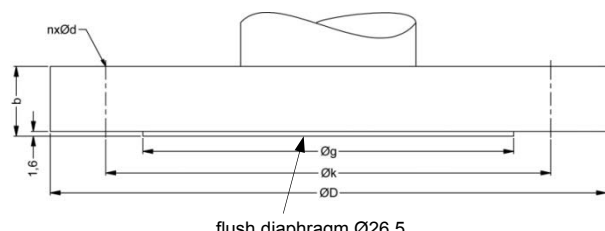
flush diaphragm Ø26.5

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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Ordering code XMP ci

XMP ci

□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
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Pressure																						
	gauge	5	1	E																		
Input	[bar] Δ																					
	0.16	1	6	0	0																	
	0.40	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 (ia)																					
	4 ... 20 mA / 2-wire																I					
	with HART [®] -communication																					
	flameproof equipment (d)																G					
	4 ... 20 mA / 2-wire																					
	with HART [®] -communication ¹																9					
	customer																consult					
Accuracy																						
$P_N < 1$ bar:	0.2 % FSO																B					
$P_N \geq 1$ bar:	0.1 % FSO																1					
	customer																9	consult				
Electrical connection																						
	terminal clamp alu housing																A	K	0			
	terminal clamp field housing																8	8	0			
	customer																9	9	9	consult		
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			
	flange DN 2" / 150 lbs (ANSI B16.5) ²																F	3	2			
	flange DN 3" / 150 lbs (ANSI B16.5) ²																F	3	3			
	DRD \varnothing 65 mm ³																D	R	D			
	customer																9	9	9	consult		
Diaphragm																						
	ceramics Al ₂ O ₃ 99,9%																C					
	customer																9	consult				
Seals																						
	FKM ⁴																1					
	EPDM ⁴																3					
	customer																9	consult				
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	consult				
Special version																						
	standard																0	0	0			
	customer																9	9	9	consult		

Δ 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 $P_N \leq 10$ 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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