



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

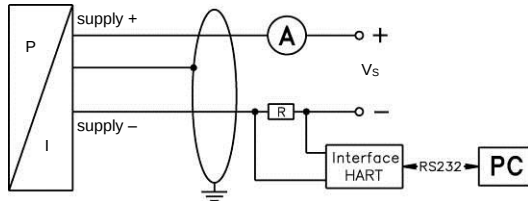


Pressure ranges¹								
Nominal pressure gauge	[bar]	0.16	0.4	1	2	5	10	20
Overpressure	[bar]	4	6	8	15	25	35	45
Permissible vacuum	[bar]	-0.3	-0.5		-1			
¹ On customer request we adjust the devices by software to the required pressure ranges. Within the turn-down-possibility (starting at 0.02 bar).								
Output signal / Supply								
2-wire: 4 ... 20 mA	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 0.16 bar up to 0.4 bar: ≤ ± (0.2 + (TD-1) × 0.02) % FSO for nominal pressure ranges from 1 bar up to 20 bar: ≤ ± (0.1 + (TD-1) × 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 effects (offset and span)								
Tolerance band	≤ ± 1 % FSO							
in compensated range	-20 ... 80 °C							
Permissible temperatures								
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 in PVDF the medium 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)				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; EPDM				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 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					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} = 33 nF		
Approval AX17-XMP ci	flameproof enclosure with aluminium die cast case IBExU 12 ATEX 1045 X							
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-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

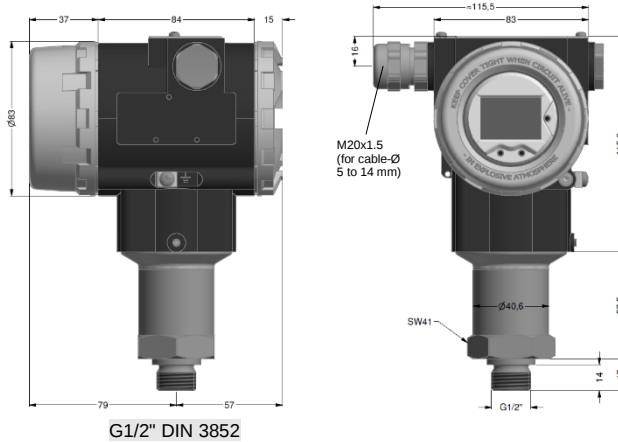


Pin configuration

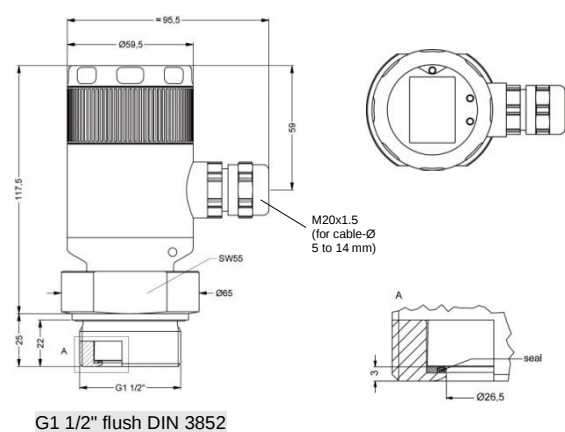
Electrical connections	aluminium die cast case: terminal clamps (clamp section: 2.5 mm ²)	stainless steel field housing: terminal clamps (clamp section: 1.5 mm ²)
Supply +	IN+	IN+
Supply -	IN-	IN-
Test	Test	-
Shield	⊕	⊕

Housing designs ⁶ (dimensions in mm)

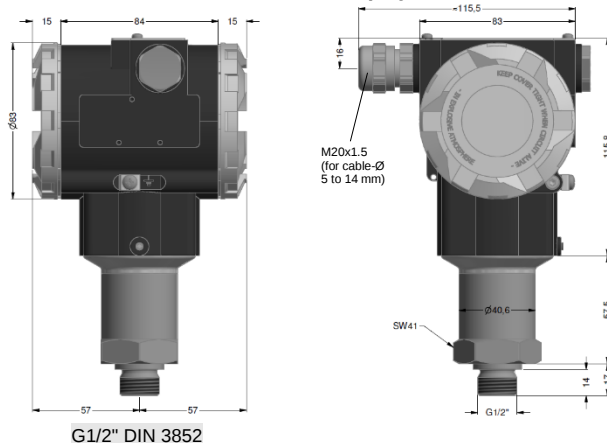
aluminium die cast case with display



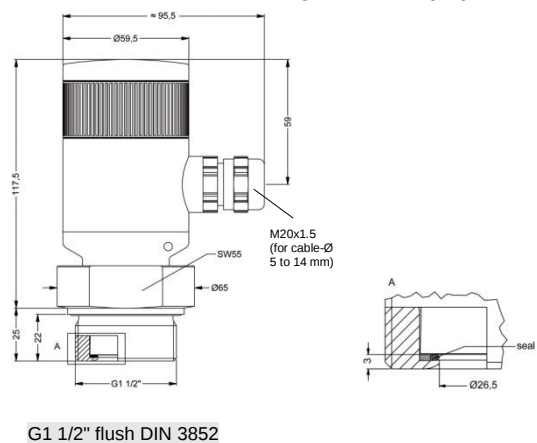
stainless steel field housing with display



aluminium die cast case without display

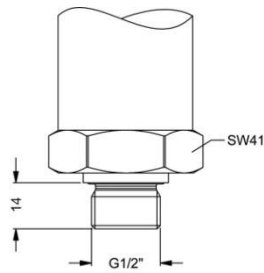


stainless steel field housing without display

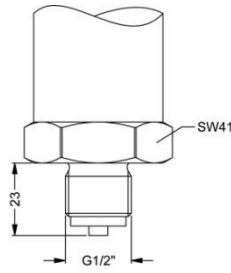


⁶ aluminium die cast case is horizontally rotatable as standard

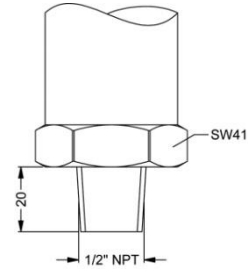
Standard pressure ports (dimensions in mm)



G1/2" DIN 3852



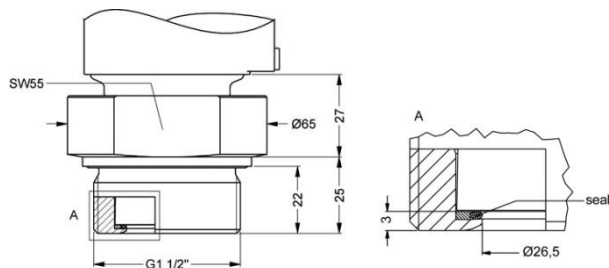
G1/2" EN 837



1/2" NPT

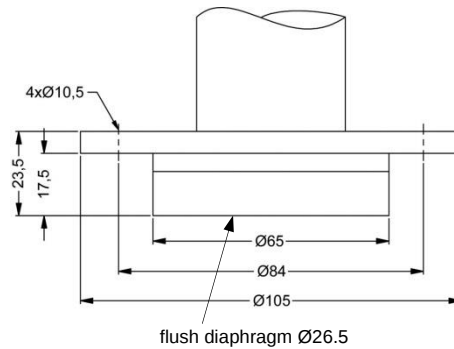
Process connections (dimensions in mm)

Inch thread

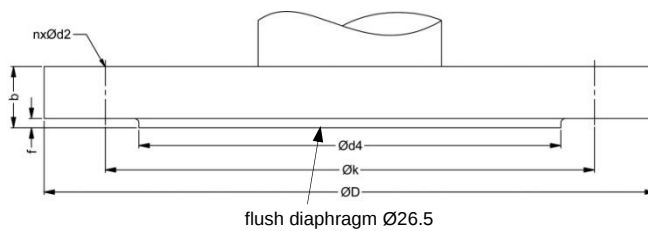


G1 1/2" flush DIN 3852

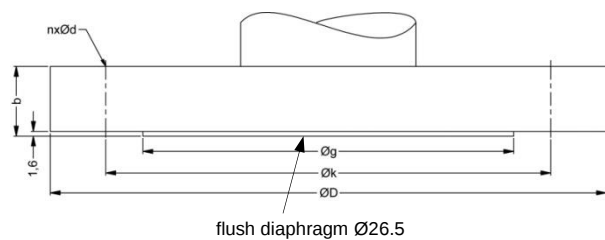
DRD ⁷



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

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

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Ordering code XMP ci

XMP ci

[illegible][illegible]

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

HART® is a registered trade mark of HART Communication Foundation

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