



x|act ci

Precision Pressure Transmitter for Food Industry, Pharmacy and Biotechnology

Ceramic Sensor

accuracy according to IEC 60770:
0.2 % FSO

Precision Pressure Transmitter

x|act ci

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 1:10
- ▶ hygienic version
- ▶ flush mounted, capacitive ceramic sensor
- ▶ several process connections (inch thread, Clamp, etc.)
- ▶ with integrated display and operating module
- ▶ diaphragm Al₂O₃ 99.9 %

Optional versions

- ▶ IS-version:
Ex ia = intrinsically safe version
- ▶ HART®-communication



The precise pressure transmitter x|act ci measures the pressure of gases, steam and fluids. The special-developed capacitive ceramic sensor for this transmitter, which can optionally be delivered in pure ceramic, has a high overpressure capability and excellent media stability.

Several process connections e.g. inch thread or hygienic versions like Varivent, dairy pipe or Clamp are available.

The robust stainless steel globe housing has a high ingress protection IP 67 and all characteristics for a residue-free and antibacterial cleaning.

Preferred areas of use are



Food Industry



Chemical and petrochemical industry



Laboratory Techniques

Preferred using in



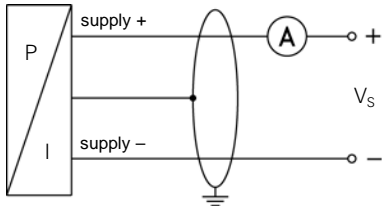
Viscous and pasty media

Pressure ranges¹									
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 on the required pressure ranges (within the turn-down-possibility; starting at 0.02 bar).									
Output signal / Supply									
Standard	2-wire: 4 ... 20 mA / V _S = 12 ... 30 V _{DC}								
Option									
Ex-protection	2-wire: 4 ... 20 mA / V _S = 12 ... 28 V _{DC}								
Ex-protection/ HART®	2-wire: 4 ... 20 mA with HART® communication / V _S = 12 ... 28 V _{DC}								
Current consumption	max. 25 mA								
Performance									
Accuracy ²	$\leq \pm 0,2 \% \text{ FSO}$ for nominal pressure ranges: turn-down < 1:5: $\pm (0,2 + (\text{TD}-1) \times 0,02) \% \text{ FSO}$ from 0.06 bar up to 0.4 bar turn-down > 1:5: $\pm (0,2 + (\text{TD}-1) \times 0,04) \% \text{ FSO}$ for nominal pressure ranges: turn-down < 1:10: $\pm (0,2 + (\text{TD}-1) \times 0,01) \% \text{ FSO}$ from 1 bar up to 20 bar turn-down > 1:10: $\pm (0,2 + (\text{TD}-1) \times 0,02) \% \text{ FSO}$ with turn-down = nominal pressure range / adjusted range								
Permissible load	$R_{\max} \leq [(V_S - V_{S \min}) / 0,02 \text{ A}] \Omega$ load during HART® communication: $R_{\min} = 250 \Omega$								
Influence effects	supply: 0.05 % FSO / 10 V permissible load: 0.05 % FSO / kΩ								
Long term stability	$\leq \pm 0,1 \% \text{ FSO} / \text{year}$								
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. 1:10 (span min. 0.02 bar)								
² accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)									
Thermal errors / Permissible temperatures									
Thermal error	$\leq \pm (0,02 \times \text{turn-down}) \% \text{ FSO} / 10 \text{ K}$ in compensated range -20 ... 80 °C								
Permissible temperatures ³	medium: -25 ... 125 °C			environment: -20 ... 70 °C			storage: -30 ... 80 °C		
³ for pressure port of PVC the maximum permissible temperature is 50 °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	inch thread, DRD and flange version, Varivent®, dairy pipe and clamp: stainless steel 1.4404 (316L) optionally for G1 1/2" flush (DIN 3852): PVDF								
Housing	stainless steel 1.4301 (304)								
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, seals, diaphragm								
Explosion protection (with option Ex-protection)									
Approval AX12-x act ci	IBExU 05 ATEX 1106 X zone 0/1 ⁴ : II 1/2G Ex ia IIC T4 Ga/Gb / II 1D Ex ia IIIC T85 °C Da								
Safety technical maximum values	U _i = 28 V, I _i = 93 mA, P _i = 660 mW, C _i = 0 nF, L _i = 0 μH, C _{GND} = 27 nF								
Permissible temperatures for environment	in zone 0: -20 ... 60 °C with p _{atm} 0.8 bar up to 1.1 bar ab zone 1: -25 ... 70 °C								
Connecting cables (by factory)	capacitance: signal line/shield also signal line/signal line: 160 pF/m inductance: signal line/shield also signal line/signal line: 1 μH/m								
⁴ The designation depends on the nominal pressure range. Nominal pressure ranges ≤ 60 mbar are marked with „2G“. For nominal pressure ranges > 60 mbar and < 10 bar see note under item 17 in the EC type-examination certificate!									

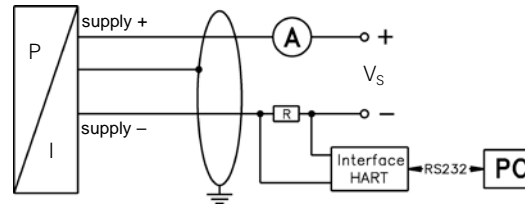
Miscellaneous	
Display	LC-display, visible range 32.5 x 22.5 mm; 5-digit 7-segment main display, digit height 8 mm, range of indication ± 9999 ; 8-digit 14-segment additional display, digit height 5 mm; 52-segement bargraph; accuracy $0.1\% \pm 1$ digit
Ingress protection	IP 67
Installation position	any
Weight	min. 400 g (depending on mechanical connection)
Operational life	$> 100 \times 10^6$ pressure cycles
CE-conformity	EMC Directive: 2004/108/EC

Wiring diagram

2-wire-system (current)



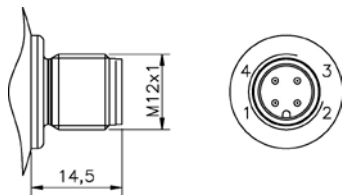
2-wire-system (current) HART®



Pin configuration

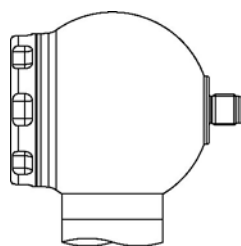
Electrical connections	M12x1 (4-pin)	cable colours (DIN 47100)
Supply +	1	white
Supply -	3	brown
Shield	plug housing	yellow / green

Electrical connections (in mm)

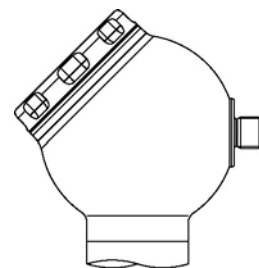
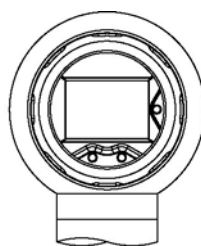


M12x1 (4-pin)

Designs ⁵



side display

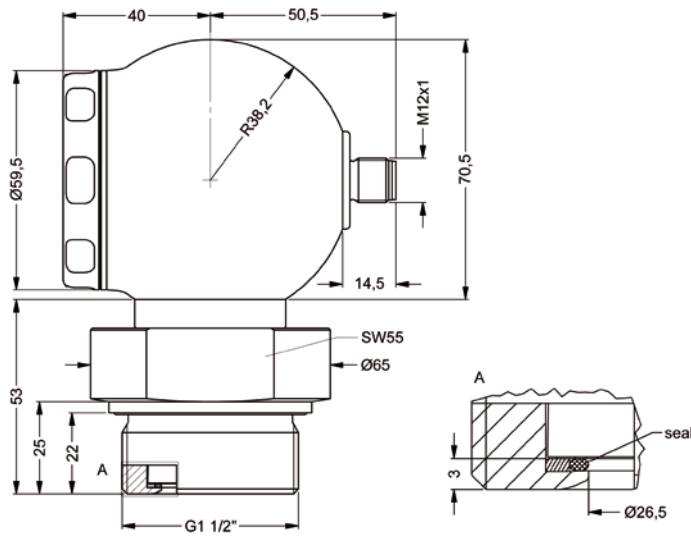


45° display

⁵ all designs in combination with G1 1/2" flush in horizontal rotatable housing as standard; other mech. connections in rotatable housing on request

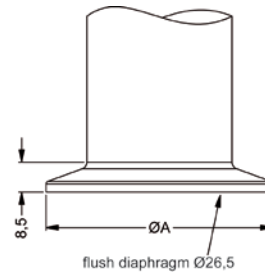
Dimensions (in mm)

Inch thread



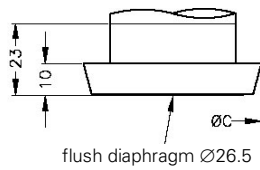
G1 1/2" flush DIN 3852

Clamp (ISO 2852)



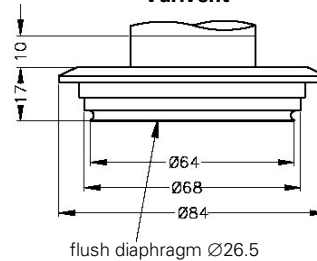
dimensions in mm		
size	1 1/2"	2"
A	50,5	64

Dairy pipe⁶ (DIN 11851)



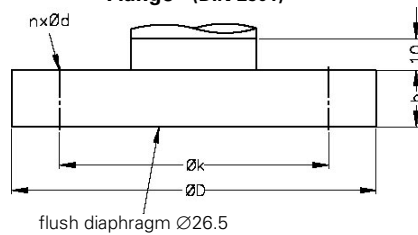
dimensions in mm		
size	DN 40	DN 50
C	56	68.5

Varivent[®]



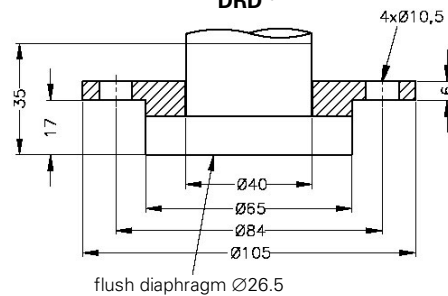
DN 40/50

Flange⁷ (DIN 2501)



dimensions in mm			
size	DN25/PN40	DN50/PN40	DN80/PN16
D	115	165	200
k	85	125	160
b	18	20	20
n	4	4	8
d	14	18	18

DRD⁶



⁶ cup nut for dairy pipe or mounting flange for DRD is included in the delivery (already pre-assembled)

⁷ DN80/PN16 possible for nominal pressure ranges $P_N \leq 7$ bar

HART[®] is a registered trade mark of HART Communication Foundation;


Varivent[®] is a trademark of GEA Tuchenhausen GmbH; Windows[®] is a registered trade mark of Microsoft Corporation


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

Ordering code xla ct ci

xla ct ci

□□□ - □□□□ - □□ - □ - □□□□ - □□□□ - □ - □ - □□□□

Pressure										
	gauge	5	1	E						
Input	 [bar]									
	0.06	0	6	0	0					
	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										
	side display					K	H			
	45° display					K	4			
Output										
	4 ... 20 mA / 2-wire								1	
	Intrinsic safety 4 ... 20 mA / 2-wire								E	
	Intrinsic safety 4 ... 20 mA / 2-wire with HART®-communication								I	
	customer								9	consult
Accuracy										
	0.2 %								B	
	customer								9	consult
Electrical connection										
	Male plug M12x1 (4-pin)					M	1	0		
	customer					9	9	9		consult
Mechanical connection										
	G 1 1/2" DIN flush (DIN 3852)					M	0	0		
	Clamp 1 1/2" (ISO 2852)					C	6	2		
	Clamp 2" (ISO 2852)					C	6	3		
	Dairy pipe DN 40 (DIN 11851) ¹					M	7	5		
	Dairy pipe DN 50 (DIN 11851) ¹					M	7	6		
	Varivent® DN 40/50					P	4	1		
	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) ²					F	1	4		
	DRD Ø 65 mm ¹					D	R	D		
	customer					9	9	9		consult
Diaphragm										
	Ceramics Al ₂ O ₃ 99,9%								C	
	customer								9	consult
Seals										
	FKM								1	
	EPDM								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								B	
	customer								9	consult
Special version										
	standard								0	0
	customer								9	9
										9
										consult

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

¹ cup nut resp. mounting flange is included in the delivery (already pre-assembled)

² DN80/PN16 possible for nominal pressure ranges up to 7 bar

HART® is a registered trade mark of HART Communication Foundation; Varivent® is a brand name of GEA Tuuchenhagen GmbH

