



## x|act ci

### Precision Pressure Transmitter for Food / Beverage, Pharmaceutical Industry and Biotechnology

Ceramic Sensor

accuracy according to IEC 60770:  
0.1 % FSO

#### 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 1:5
- ▶ hygienic version
- ▶ flush mounted, capacitive ceramic sensor
- ▶ several process connections (inch thread, Clamp, etc.)
- ▶ with integrated display and operating module
- ▶ diaphragm Al<sub>2</sub>O<sub>3</sub> 99.9 %




#### Optional versions

- ▶ IS-version:  
Ex ia = intrinsically safe version
- ▶ HART<sup>®</sup>-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<sup>®</sup>, 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 and Beverage
-  Chemical and Petrochemical Industry
-  Laboratory Techniques

#### Preferred using in

-  Viscous and pasty media

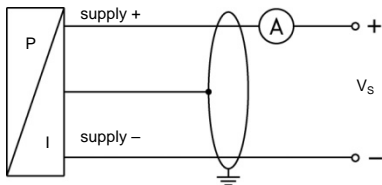


Pressure ranges <sup>1</sup>										
Nominal pressure gauge	[bar]	0.06	0.16	0.4	1	2	5	10	20	
Overpressure	[bar]	2	4	6	8	15	25	35	45	
Permissible vacuum	[bar]	-0.2	-0.3	-0.5			-1			
<sup>1</sup> On customer request we adjust the devices by software on the required pressure ranges (within the turn-down-possibility; starting at 0.02 bar).										
Output signal / Supply										
Standard	2-wire: 4 ... 20 mA / V <sub>S</sub> = 12 ... 30 V <sub>DC</sub>									
Option	IS-protection IS-protection/ HART® 2-wire: 4 ... 20 mA / V <sub>S</sub> = 12 ... 28 V <sub>DC</sub> 2-wire: 4 ... 20 mA with HART® communication / V <sub>S</sub> = 12 ... 28 V <sub>DC</sub>									
Current consumption	max. 25 mA									
Performance										
Accuracy <sup>2</sup>	nominal pressure < 1 bar: ≤ ± 0,2 % FSO									
	nominal pressure ≥ 1 bar: ≤ ± 0,1 % FSO									
	for nominal pressure ranges: from 0.06 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 <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 % 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)									
<sup>2</sup> 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	medium: -25 ... 125 °C			environment: -20 ... 70 °C				storage: -30 ... 80 °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	FKM (permissible temperature: -25 ... 125 °C) EPDM others on request									
Diaphragm	ceramics Al <sub>2</sub> O <sub>3</sub> 99.9 %									
Media wetted parts	pressure port, seals, diaphragm									
Explosion protection										
Approval AX12-x act ci	IBExU05ATEX1106 X zone 0/1 <sup>3</sup> : II 1/2G Ex ia IIC T4 Ga/Gb / II 1D Ex ia IIIC T85 °C Da									
Safety technical maximum values	U <sub>i</sub> = 28 V, I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> = 0 nF, L <sub>i</sub> = 0 μH, the supply connections have an inner capacity of max. 27 nF to the housing									
Permissible temperatures for environment	in zone 0: -20 ... 60 °C with p <sub>atm</sub> 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									
<sup>3</sup> 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!										

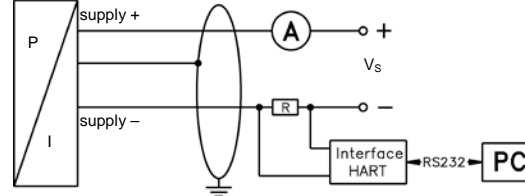
Miscellaneous	
Display	LC-display, visible range 32.5 x 22.5 mm; 5-digit 7-segment main display, digit height 8 mm, range of indication $\pm 9999$ ; 8-digit 14-segment additional display, digit height 5 mm; 52-segment bargraph; accuracy 0.1% $\pm$ 1 digit
Ingress protection	IP 67
Installation position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

### Wiring diagram

2-wire-system (current)



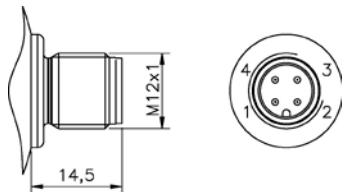
2-wire-system (current) HART®



### Pin configuration

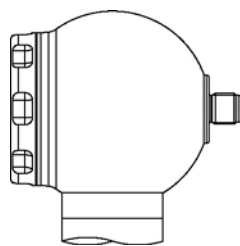
Electrical connections	M12x1 (4-pin)	cable colours (DIN 47100)
Supply +	1	wh (white)
Supply -	3	bn (brown)
Shield	plug housing	ye/gn (yellow / green)

### Electrical connections (in mm)

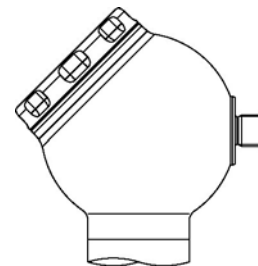
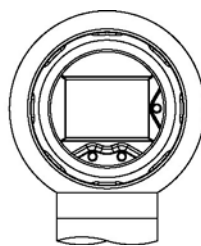


M12x1 (4-pin)

### Designs <sup>4</sup>



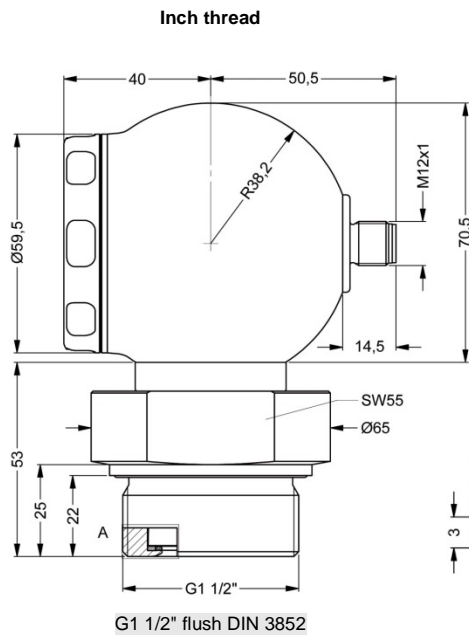
side display



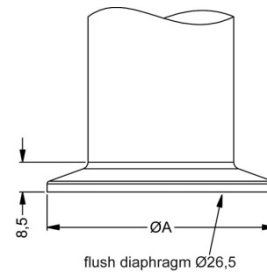
45° display

<sup>4</sup> 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)

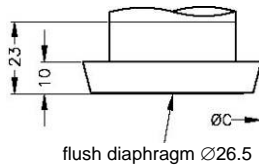


## Clamp (DIN 32676)



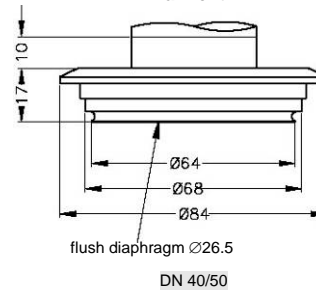
dimensions in mm		
size	DN32	DN50
A	50.5	64
P <sub>N</sub> [bar]	≤ 16	≤ 16

## Dairy pipe<sup>6</sup> (DIN 11851)

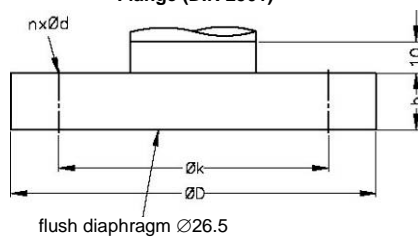


dimensions in mm		
size	DN 40	DN 50
C	56	68.5

## Varivent®

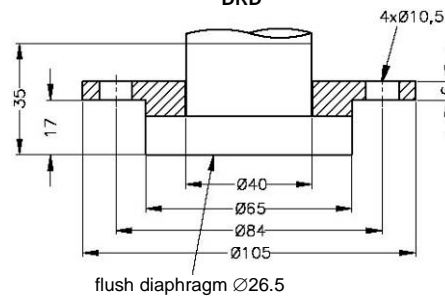


## Flange (DIN 2501)



dimensions in mm			
size	DN25	DN50/PN40	DN80
D	115	165	200
k	85	125	160
b	18	20	20
n	4	4	8
d	14	18	18
P <sub>N</sub>	≤ 40 bar	≤ 40 bar	≤ 16 bar

## DRD<sup>5</sup>



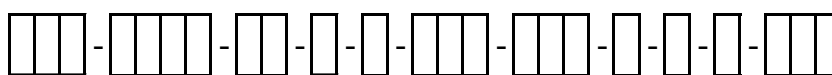
<sup>5</sup> cup nut for dairy pipe or mounting flange for DRD is included in the delivery (already pre-assembled)

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

# Ordering code x|act ci

x|act ci



<b>Pressure</b>										
	gauge	5	1	E						
<b>Input</b>										
	[bar]	0	6	0	0					
		0	16	0	0					
		0	4	0	0					
		1	1	0	0					
		2	2	0	0					
		5	5	0	0					
		10	1	0	0					
		20	2	0	0					
	customer	9	9	9	9				consult	
<b>Design</b>										
	side display					K	H			
	45° display					K	4			
<b>Output</b>										
	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
<b>Accuracy</b>										
	0.1 %								1	
	customer								9	
										consult
<b>Electrical connection</b>										
	Male plug M12x1 (4-pin)					M	1	0		
	customer					9	9	9		
										consult
<b>Mechanical connection</b>										
	G 1 1/2" DIN flush (DIN 3852)					M	0	0		
	Clamp DN 32 / 1 1/2" (DIN 32676)					C	6	2		
	Clamp DN 50 / 2" (DIN 32676)					C	6	3		
	Dairy pipe DN 40 (DIN 11851) <sup>1</sup>					M	7	5		
	Dairy pipe DN 50 (DIN 11851) <sup>1</sup>					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)					F	1	4		
	DRD Ø 65 mm <sup>1</sup>					D	R	D		
	customer					9	9	9		
										consult
<b>Diaphragm</b>										
	Ceramics Al <sub>2</sub> O <sub>3</sub> 99,9%								C	
	customer								9	
										consult
<b>Seals</b>										
	FKM								1	
	EPDM								3	
	customer								9	
										consult
<b>Pressure port</b>										
	standard: Stainless steel 1.4404 (316L)								1	
	option for G 1 1/2" flush: PVDF								B	
	customer								9	
										consult
<b>Special version</b>										
	standard								0	
	customer								9	
									9	
									9	
										consult

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

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

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01.06.2013

This document contains product specification; properties are not guaranteed. Detailed information about options are defined in the datasheet. Subject to change without notice.



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