



# 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 ... 160 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

- ▶ explosion protection intrinsic safety (ia)
- ▶ 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 and beverage
-  Chemical and petrochemical industry
-  Laboratory techniques

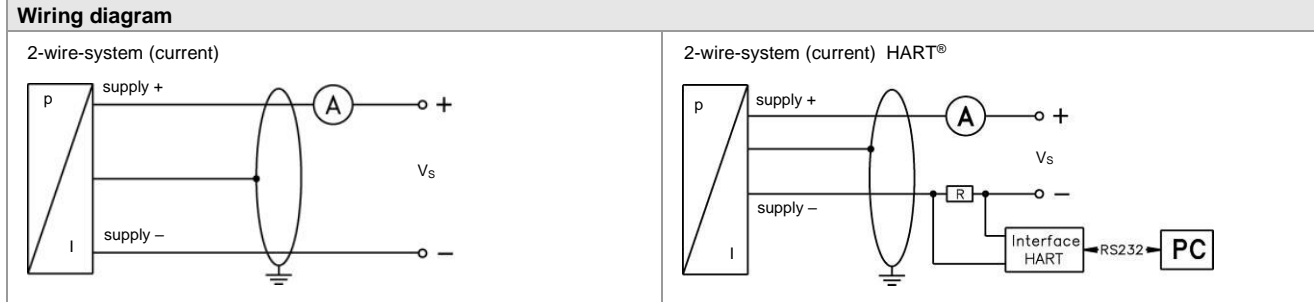
### Preferred using in

-  Viscous and pasty media

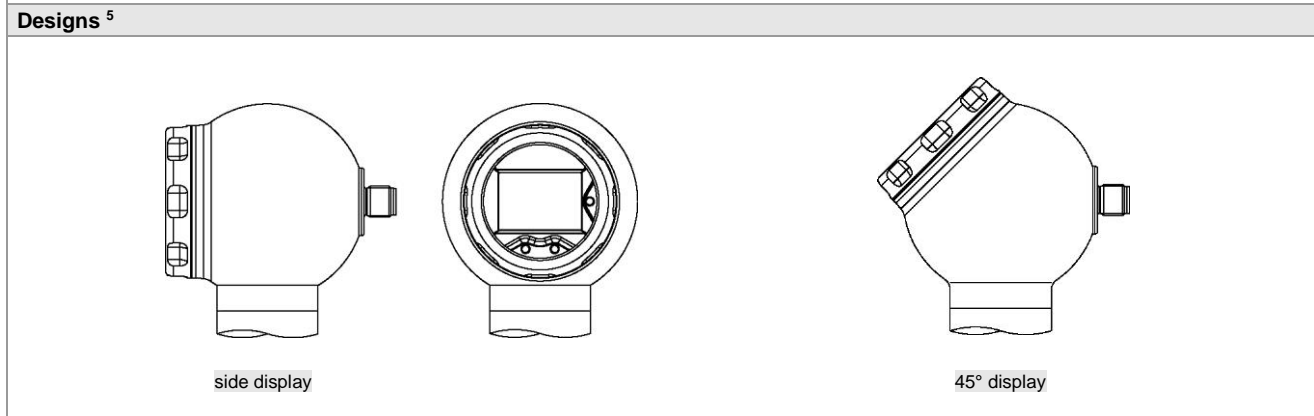
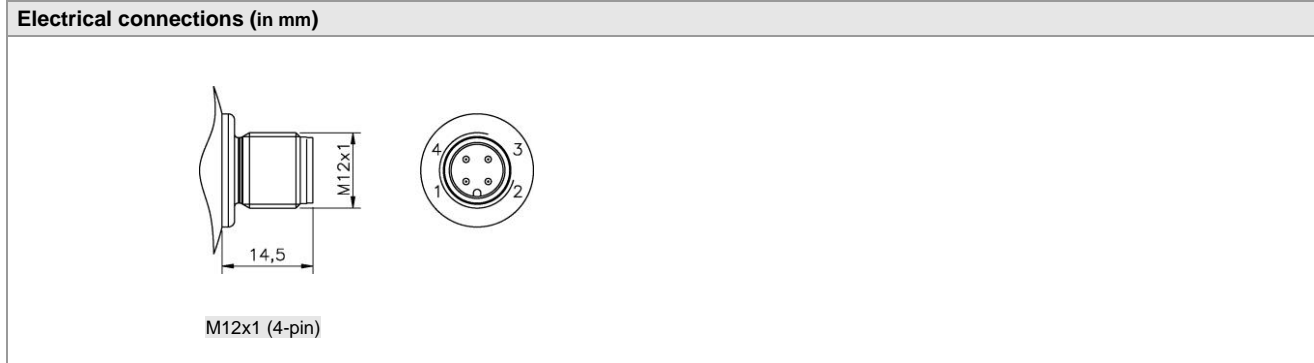


Pressure ranges <sup>1</sup>									
Nominal pressure gauge	[bar]	0.16	0.4	1	2	5	10	20	
Overpressure	[bar]	4	6	8	15	25	35	45	
Permissible vacuum	[bar]	-0.3	-0.5		-1				
<sup>1</sup> On customer request we adjust the devices by software on the required pressure ranges (within the turn-down-possibility; starting at 0.02 bar).									
Output signal / Supply									
2-wire: 4 ... 20 mA	standard:	analogue signal					V <sub>S</sub> = 12 ... 30 V <sub>DC</sub>		
	options:	intrinsic safety (ia)					V <sub>S</sub> = 12 ... 28 V <sub>DC</sub>		
		intrinsic safety (ia) 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 0.16 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 <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 effects (offset and span)									
Tolerance band	≤ ± 1 % FSO								
in compensated range	-20 ... 80 °C								
Permissible temperatures									
Permissible temperatures <sup>3</sup>	medium: -25 ... 125 °C		environment: -20 ... 70 °C			storage: -30 ... 80 °C			
<sup>3</sup> 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	inch thread, DRD, flange, 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; 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	IExU05ATEX1106 X zone 0/1 <sup>4</sup> : II 2G Ex ia IIC T4 Gb II 1/2G Ex ia IIC T4 Ga/Gb II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T85 °C Da								
Safety technical maximum values	U <sub>i</sub> = 28 V, I <sub>i</sub> = 98 mA, P <sub>i</sub> = 680 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 in zone 1 or higher: -40 ... 70 °C								
Connecting cables (by factory)	cable capacitance: signal line/shield also signal line/signal line: 160 pF/m cable inductance: signal line/shield also signal line/signal line: 1 μH/m								
<sup>4</sup> 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“. The note under item 17 in the EC type-examination certificate must be observed!									

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 million load cycles
CE-conformity	EMC Directive: 2014/30/EU
ATEX Directive	2014/34/EU

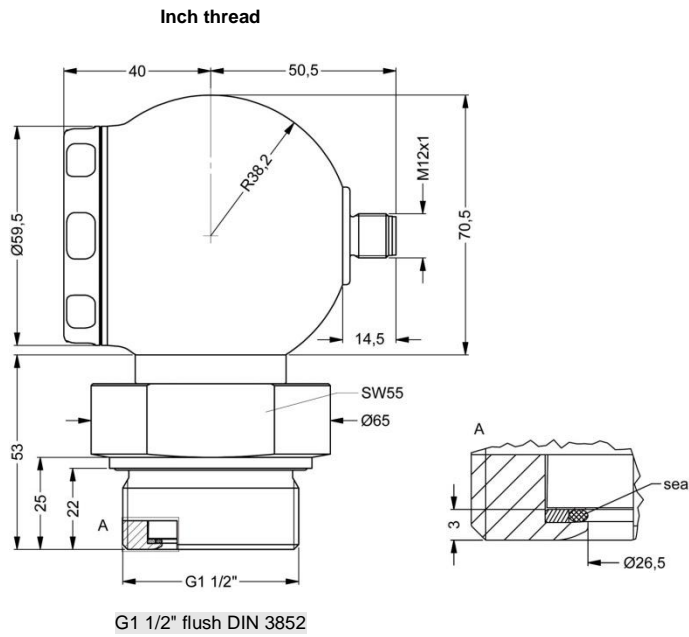


Pin configuration	
Electrical connections	M12x1 (4-pin), metal
Supply +	1
Supply -	3
Shield	plug housing

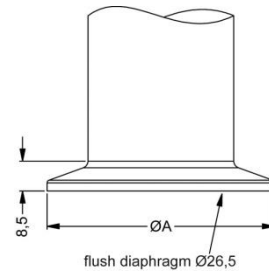


<sup>5</sup> all designs in combination with G1 1/2" flush in horizontal rotatable housing as standard; other mech. connections in rotatable housing on request

**Dimensions (in mm)**

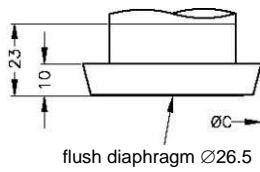


**Clamp (DIN 32676)**



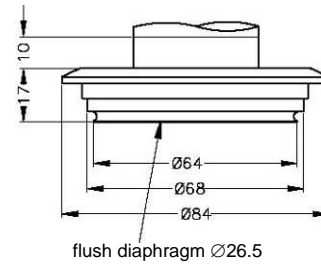
dimensions in mm		
size	DN32	DN50
A	50.5	64
p <sub>N</sub> [bar]	≤ 16	≤ 16

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



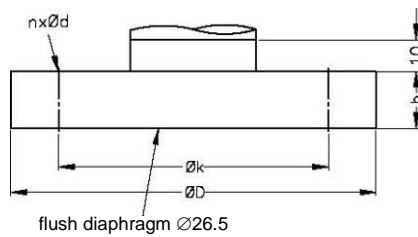
dimensions in mm		
size	DN 40	DN 50
C	56	68.5

**Varivent<sup>®</sup>**



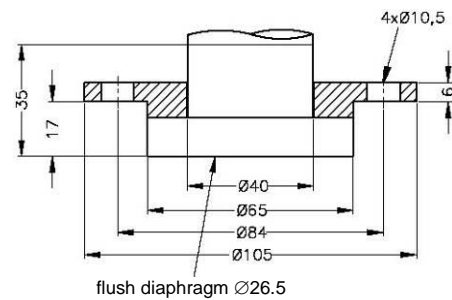
DN 40/50

**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> [bar]	≤ 40	≤ 40	≤ 16

**DRD<sup>6</sup>**



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

HART<sup>®</sup> is a registered trademark of HART Communication Foundation;

Varivent<sup>®</sup> is a trademark of GEA Tuchenhagen GmbH; Windows<sup>®</sup> is a registered trademark of Microsoft Corporation

