



x|act ci

Precision Pressure Transmitter for Food Industry, Pharmacy and Biotechnology

- ▶ with integrated display and operating module
- ▶ hygienic version
- ▶ flush mounted, capacitive ceramic sensor
- ▶ nominal pressure ranges from 0 ... 60 mbar up to 0 ... 20 bar

DESIGN

Our capacitive ceramic sensor DSK 701 I is the basis for x|act ci, which is especially characterized by its high overpressure capability, its very good long-term stability, and its mechanical and chemical resistance.

For highly aggressive media, a diaphragm in high-purity ceramics Al_2O_3 99,9 % can be optionally offered.

The pressure sensor DSK 701 I is connected to the integrated display and operating module via the I²C-interface.

OPERATING

The display and operating module allows an on-site setting of all x|act ci functions, which can be easily and quickly parameterized via three buttons.

- offset and span damping
- units
- display
- password

The device can be optionally equipped with HART® communication, and will then be delivered together with the appropriate configuration software (against additional charge).

- ▶ accuracy:
0.1 % FSO BFSL
(0.2 FSO IEC 60770)
- ▶ turn-down 1:5
- ▶ several process connections:
 - inch thread
 - clamp
 - dairy pipe
 - Varivent®
 - flange
 - DRD
- ▶ high ingress protection IP 67
- ▶ optionally:
 - **HART®-communication**
 - **Ex-intrinsically safe version (zone 0)**
 - **diaphragm Al_2O_3 99.9 %**
 - PROFIBUS PA
(in preparation)

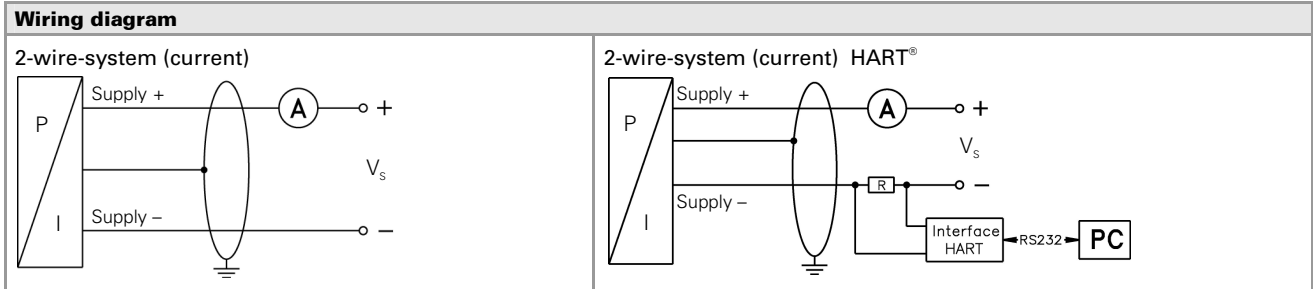
Characteristics

x|act ci
Precision Pressure Transmitter

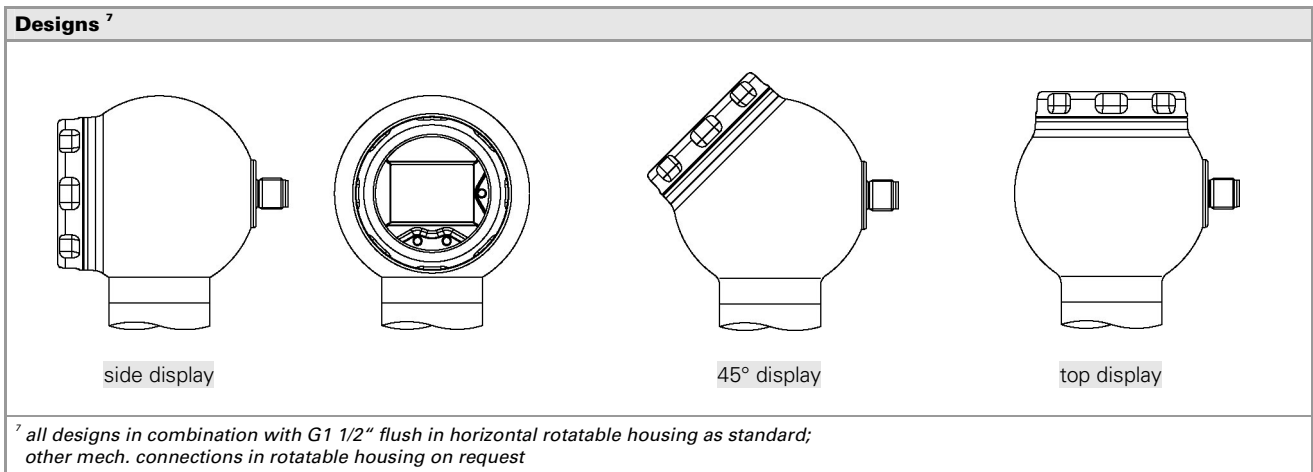
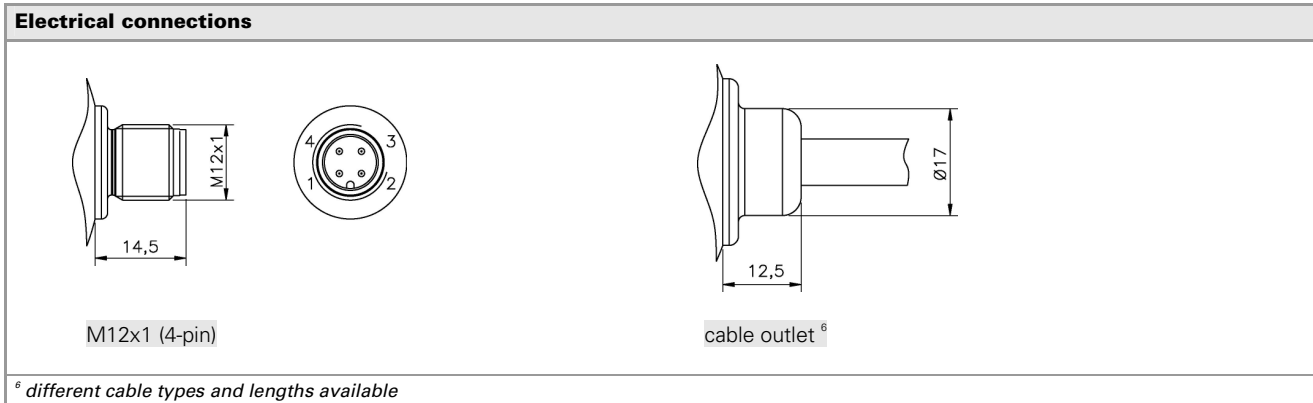


Pressure ranges ¹								
Nominal pressure gauge [bar]	0.06	0.16	0.4	1	2	5	10	20
Permissible overpressure [bar]	2	4	6	8	15	25	35	60
Permissible overpressure [bar]	-0.2	-0.3	-0.5			-1		
¹ On customer request we adjust the devices by software on the required pressure ranges (within the turn-down-possibility; starting at 0.02 bar).								
Output signal / Supply								
Standard	2-wire: 4 ... 20 mA / V _S = 10 ... 30 V _{DC}							
Option	2-wire: 4 ... 20 mA / V _S = 10 ... 28 V _{DC}							
Ex-protection	2-wire: 4 ... 20 mA with HART® communication / V _S = 10 ... 28 V _{DC}							
Ex-protection/ HART®	digital output signal (according to IEC 61158) / V _S = 10 ... 30 V _{DC} (in preparation)							
PROFIBUS PA								
Current consumption	max. 25 mA							
Performance								
Accuracy ^{2,3}	turn-down ≤ 1:3 ≤ ± 0.2 % FSO turn-down > 1:3 ≤ ± [0.2 + 0.015 x turn-down] % FSO with turn-down = nominal pressure range / adjusted range							
Permissible load	R _{max} = [(V _S - V _{Smin}) / 0.02] 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 x turn-down) % FSO / year							
Response time	200 ms – 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)								
³ for nominal pressure ranges ≤ 0.4 bar the accuracy is calculated as follows: ≤ ± [0.2 + 0.02 x turn-down] % FSO								
Thermal errors / Permissible temperatures								
Thermal error	≤ ± (0.1 x turn-down) % FSO / 10 K in compensated range 0 ... 80 °C							
Permissible temperatures ⁴	medium: -25 ... 125 °C		environment: -20 ... 70 °C			storage: -30 ... 80 °C		
⁴ 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 ms							
Materials								
Pressure port	inch thread, DRD and flange version: stainless steel 1.4571 (316Ti) Varivent®, dairy pipe and clamp: 1.4435 (316L) optionally for G1 1/2" flush (DIN 3852): PVC / PVDF							
Housing	stainless steel 1.4301 (304)							
Viewing glass	laminated safety glass							
Seals (media wetted)	FKM / EPDM / others on request							
Diaphragm	standard: ceramics Al ₂ O ₃ 96 % option for pressure ranges 0.16 bar, 0.4 bar and 1 bar: ceramics Al ₂ O ₃ 99.9 %							
Media wetted parts	pressure port, seals, diaphragm							
Explosion protection (optionally)								
Approval AX12-x act ci	stainless steel pressure port: zone 0: II 1 G EEx ia IIC T4 PVC/PVDF pressure port: zone 0/1 ⁵ : II 1/2G EEx ia IIC T4							
Safety technical maximum values	U _i = 28 V, I _i = 93 mA, P _i = 660 mW							
Permissible temperatures for environment	in zone 0: -20 ... 60 °C with p _{atm} 0.8 bar up to 1.1 bar in zone 1: -20 ... 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							
⁵ 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!								

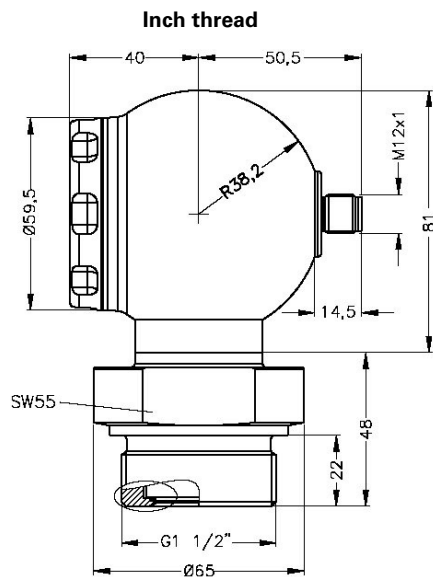
Miscellaneous	
Display	LC-display, visible range 32.5 x 22.5 mm; 5-digit 7-segment main display, digit height 8 mm, range of indication ± 9999 ; 8-digit 14-segment additional display, digit height 5 mm; 52-segement bargraph; accuracy $0.1\% \pm 1$ digit
Ingress protection	IP 67
Installation position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



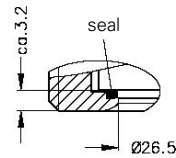
Pin configuration		
Electrical connections	M12x1 (4-pin)	cable colour (DIN 47100)
Supply +	1	white
Supply -	3	brown
Ground	plug housing	yellow / green (shield)



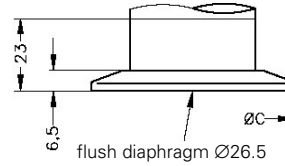
Dimensions (in mm)



G1 1/2" flush DIN 3852

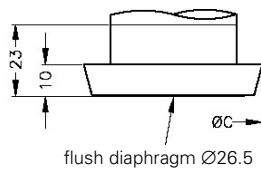


Clamp (ISO 2852)



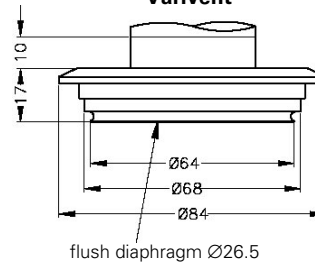
dimensions in mm		
size	1 1/2"	2"
C	50.5	64

Dairy pipe^a (DIN 11851)



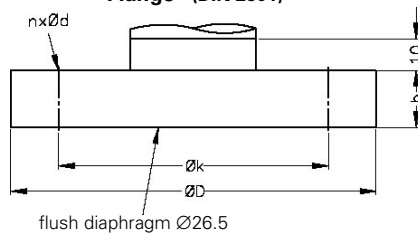
dimensions in mm		
size	DN 40	DN 50
C	56	68.5

Varivent[®]



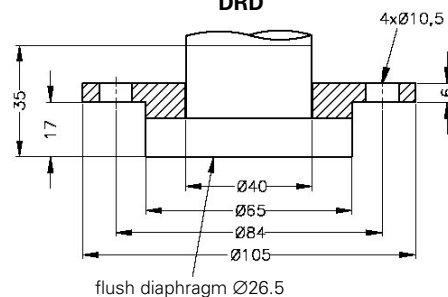
DN 40/50

Flange^a (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

DRD^a



flush diaphragm Ø26.5

^a cup nut for dairy pipe is included in the delivery (already pre-assembled)

^a 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

