



## CCA-Xact

- pressure transmitter
- hygienic version
- for food / beverage, pharmaceutical industry and biotechnology
- nominal pressure: from 0...60 mbar up to 0...20 bar
- output signals: 2-wire: 4...20 mA
- internal or flush mounted capacitive ceramic sensor
- integrated display and operating module
- accuracy 0.1 % span
- turn-down 5:1
- certified for contact with drinking water by the Polish National Institute of Public Health (PZH) - EPDM version

The precise pressure transmitter **CCA-Xact** 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



Laboratory Techniques



Chemical and petrochemical industry



Food and beverage



Viscous and pasty media

### TECHNICAL DATA

#### 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

|                     |                           |                                    |
|---------------------|---------------------------|------------------------------------|
| 2-wire: 4 ... 20 mA | standard: analogue signal | $V_S = 12 \dots 30 \text{ V}_{DC}$ |
| Current consumption | max. 25 mA                |                                    |

#### Performance

|                       |                                                                |                                               |
|-----------------------|----------------------------------------------------------------|-----------------------------------------------|
| Accuracy <sup>2</sup> | nominal pressure < 1 bar: $\leq \pm 0.2 \%$ span               |                                               |
|                       | nominal pressure $\geq 1$ bar: $\leq \pm 0.1 \%$ span          |                                               |
|                       | for nominal pressure ranges:<br>from 0.16 bar up to 0.4 bar    | $\leq \pm (0.2 + (TD-1) \times 0.02) \%$ span |
|                       | for nominal pressure ranges:<br>from 1 bar up to 20 bar        | $\leq \pm (0.1 + (TD-1) \times 0.01) \%$ span |
|                       | with turn-down = nominal pressure range / adjusted range       |                                               |
| Permissible load      | $R_{max} \leq [(V_S - V_{S \min}) / 0.02 \text{ A}] \text{ W}$ |                                               |
| Influence effects     | supply: 0.05 % span / 10 V                                     | permissible load: 0.05 % span / kW            |
| Long term stability   | $\leq \pm 0.1 \%$ span / year                                  |                                               |
| Response time         | 200 msec – without consideration of electronic damping         | measuring rate 5/sec                          |
| Adjustability         | electronic damping: 0 ... 100 sec                              |                                               |
|                       | offset: 0 ... 80 % span                                        |                                               |
|                       | turn-down of span: max. 5:1 (span min. 0.02 bar)               |                                               |

<sup>2</sup> accuracy according to EN IEC 62828-2 – limit point adjustment (non-linearity, hysteresis, repeatability)

#### Permissible temperatures

|                          |                                                                                             |                            |                        |
|--------------------------|---------------------------------------------------------------------------------------------|----------------------------|------------------------|
| Thermal error            | $\leq \pm (0.02 \times \text{turn-down}) \%$ span / 10 K in compensated range -20 ... 80 °C |                            |                        |
| Permissible temperatures | medium: -25 ... 125 °C                                                                      | environment: -20 ... 70 °C | storage: -30 ... 80 °C |

<sup>3</sup> Maximum permissible temperature with PVC pressure port 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 |



Pressure transmitters

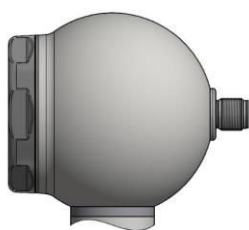
| Mechanical stability  |                                                                                                                                                                                                                                |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vibration             | 5 g RMS (25 ... 2000 Hz)                                                                                                                                                                                                       |
| Shock                 | 100 g / 11 msec                                                                                                                                                                                                                |
| Materials             |                                                                                                                                                                                                                                |
| Pressure port         | inch thread, DRD and flange version,<br>Varivent®, dairy pipe and clamp: stainless steel 1.4404 (316L)<br>optionally for G1 1/2" flush (DIN 3852): PVDF                                                                        |
| Housing               | stainless steel 1.4301 (304)                                                                                                                                                                                                   |
| Viewing glass         | laminated safety glass                                                                                                                                                                                                         |
| Seals                 | FKM<br>EPDM (with drinking water certificate)<br>others on request                                                                                                                                                             |
| Diaphragm             | ceramics Al <sub>2</sub> O <sub>3</sub> 99,9 %                                                                                                                                                                                 |
| Media wetted parts    | pressure port, seals, diaphragm                                                                                                                                                                                                |
| 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-segment bargraph; accuracy 0.1% ± 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> cycles                                                                                                                                                                                                 |
| CE-conformity         | EMC Directive: 2014/30/EU                                                                                                                                                                                                      |

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

ELECTRICAL CONNECTION

| Wiring diagram                            |               |                           |
|-------------------------------------------|---------------|---------------------------|
|                                           |               |                           |
| Pin configuration                         |               |                           |
| Electrical connection                     | M12x1 (4-pin) | cable colours (IEC 60757) |
| Supply +                                  | 1             | wh (white)                |
| Supply -                                  | 3             | bn (brown)                |
| Shield                                    | plug housing  | ye/gn (yellow / green)    |
| Electrical connections (dimensions in mm) |               |                           |
|                                           |               |                           |

DESIGNS



Side display

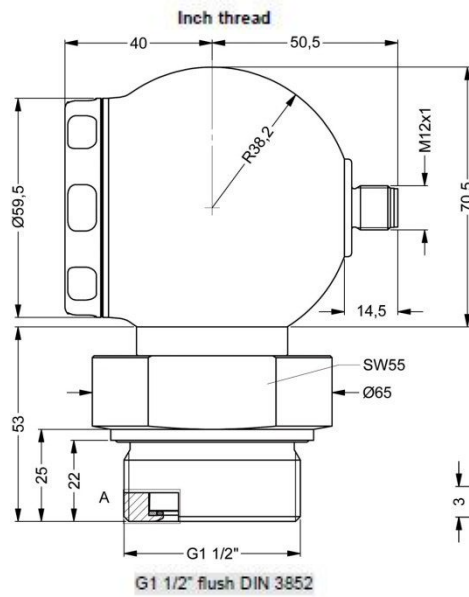


45° display (on request)

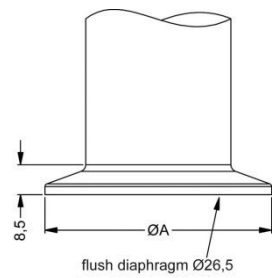
<sup>5</sup> all designs in combination with G1 1/2" flush in horizontal rotatable housing as standard; other mech. connections in rotatable housing on request



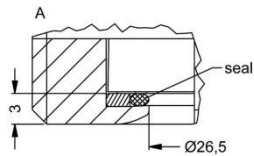
DIMENSION DRAWINGS



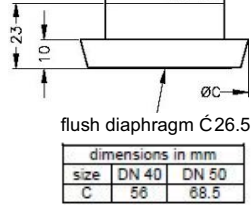
Clamp (DIN 32676)



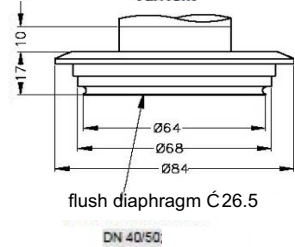
| dimensions in mm     |      |      |
|----------------------|------|------|
| size                 | DN32 | DN50 |
| A                    | 50,5 | 64   |
| P <sub>N</sub> [bar] | ≤ 16 | ≤ 16 |



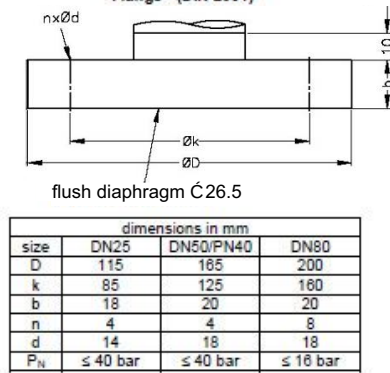
Dairy pipe<sup>6</sup> (DIN 11851)



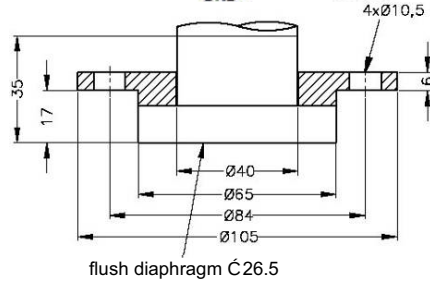
Varivent<sup>®</sup>



Flange<sup>7</sup> (DIN 2501)



DRD<sup>8</sup>



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

<sup>7</sup> DN80/PN16 possible with nominal pressure ranges P<sub>N</sub> ≤ 7 bar

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



**ORDER CODE**

|                                                                  |   |   |   |   |   |   |   |   |       |
|------------------------------------------------------------------|---|---|---|---|---|---|---|---|-------|
| Pressure                                                         |   |   |   |   |   |   |   |   |       |
| Gauge                                                            | 5 | 1 | E |   |   |   |   |   |       |
| Input [bar]                                                      |   |   |   |   |   |   |   |   |       |
| 0 ... 0,06                                                       |   |   |   | 0 | 6 | 0 | 0 |   |       |
| 0 ... 0,16                                                       |   |   |   | 1 | 6 | 0 | 0 |   |       |
| 0 ... 0,4                                                        |   |   |   | 4 | 0 | 0 | 0 |   |       |
| 0 ... 1                                                          |   |   |   | 1 | 0 | 0 | 1 |   |       |
| 0 ... 2                                                          |   |   |   | 2 | 0 | 0 | 1 |   |       |
| 0 ... 5                                                          |   |   |   | 5 | 0 | 0 | 1 |   |       |
| 0 ... 10                                                         |   |   |   | 1 | 0 | 0 | 2 |   |       |
| 0 ... 20                                                         |   |   |   | 2 | 0 | 0 | 2 |   |       |
| Customer                                                         |   |   |   | 9 | 9 | 9 | 9 |   |       |
| Design                                                           |   |   |   |   |   |   |   |   |       |
| Stainless steel ball housing - side display (IP 67)              |   |   |   |   |   |   | K | H |       |
| Stainless steel ball housing - 45° display (IP 67)               |   |   |   |   |   |   | K | 4 |       |
| Output                                                           |   |   |   |   |   |   |   |   |       |
| 4 ... 20 mA / 2-wire                                             |   |   |   |   |   |   |   | 1 |       |
| Customer                                                         |   |   |   |   |   |   |   | 9 |       |
| Accuracy                                                         |   |   |   |   |   |   |   |   |       |
| 0,1 % (P <sub>N</sub> ≥ 1 bar)                                   |   |   |   |   |   |   |   | 1 |       |
| 0,1 % including Calibration Certificate (P <sub>N</sub> ≥ 1 bar) |   |   |   |   |   |   |   | P |       |
| 0,2 % (P <sub>N</sub> < 1 bar)                                   |   |   |   |   |   |   |   | B |       |
| 0,2 % including Calibration Certificate (P <sub>N</sub> < 1 bar) |   |   |   |   |   |   |   | Q |       |
| Customer                                                         |   |   |   |   |   |   |   | 9 |       |
| Electrical connection                                            |   |   |   |   |   |   |   |   |       |
| Connector M12 x 1, 4-pin (IP 67) - metal                         |   |   |   |   |   |   |   | M | 1 0   |
| Customer                                                         |   |   |   |   |   |   |   | 9 | 9 9   |
| Mechanical connection                                            |   |   |   |   |   |   |   |   |       |
| G 1 1/2" DIN 3852                                                |   |   |   |   |   |   |   | M | 0 0   |
| Clamp DN 1 1/2" (DN 32)                                          |   |   |   |   |   |   |   | C | 6 2   |
| Clamp DN 2" (DN 50)                                              |   |   |   |   |   |   |   | C | 6 3   |
| Dairy pipe DIN 11851 DN 40 <sup>1</sup>                          |   |   |   |   |   |   |   | M | 7 5   |
| Dairy pipe DIN 11851 DN 50 <sup>1</sup>                          |   |   |   |   |   |   |   | M | 7 6   |
| Flange DN 80/PN 16 DIN 2501                                      |   |   |   |   |   |   |   | F | 1 4   |
| Flange DN 25/PN 40 DIN 2501                                      |   |   |   |   |   |   |   | F | 2 0   |
| Flange DN 40/PN 40 DIN 2501                                      |   |   |   |   |   |   |   | F | 2 2   |
| Flange DN 50/PN 40 DIN 2501                                      |   |   |   |   |   |   |   | F | 2 3   |
| DRD Ø 65 mm <sup>1</sup>                                         |   |   |   |   |   |   |   | D | R D   |
| Customer                                                         |   |   |   |   |   |   |   | 9 | 9 9   |
| Diaphragm                                                        |   |   |   |   |   |   |   |   |       |
| Ceramic Al <sub>2</sub> O <sub>3</sub> 96 %                      |   |   |   |   |   |   |   |   | 2     |
| Ceramic Al <sub>2</sub> O <sub>3</sub> 99,9 %                    |   |   |   |   |   |   |   |   | C     |
| Customer                                                         |   |   |   |   |   |   |   |   | 9     |
| Seals                                                            |   |   |   |   |   |   |   |   |       |
| Viton (FKM)                                                      |   |   |   |   |   |   |   |   | 1     |
| EPDM <sup>3</sup>                                                |   |   |   |   |   |   |   |   | 3     |
| Customer                                                         |   |   |   |   |   |   |   |   | 9     |
| Pressure port                                                    |   |   |   |   |   |   |   |   |       |
| Stainless steel 1.4404 (316 L)                                   |   |   |   |   |   |   |   |   | 1     |
| PVDF (only for mechanical connection M00) <sup>2</sup>           |   |   |   |   |   |   |   |   | B     |
| Customer                                                         |   |   |   |   |   |   |   |   | 9     |
| Special version                                                  |   |   |   |   |   |   |   |   |       |
| Standard                                                         |   |   |   |   |   |   |   |   | 0 0 0 |
| Customer                                                         |   |   |   |   |   |   |   |   | 9 9 9 |
| Programming                                                      |   |   |   |   |   |   |   |   |       |
| HART® modem HM02 + USB including SW CONFIG                       |   |   |   |   |   |   |   |   |       |
| 50318                                                            |   |   |   |   |   |   |   |   |       |



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