

## 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
- diaphragm Al<sub>2</sub>O<sub>3</sub> 99.9 %



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 vakuum           | [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 <span style="float: right;">V<sub>S</sub> = 12 ... 30 V<sub>DC</sub></span>  |
| Current consumption  | max. 25 mA   |
| Performance  |  |
| Accuracy <sup>2</sup>  | nominal pressure < 1 bar: ≤ ± 0.2 % span<br>nominal pressure ≥ 1 bar: ≤ ± 0.1 % span   |
|  | for nominal pressure ranges: ≤ ± (0.2 + (TD-1) x 0.02) % span<br>from 0.16 bar up to 0.4 bar   |
|  | for nominal pressure ranges: ≤ ± (0.1 + (TD-1) x 0.01) % span<br>from 1 bar up to 20 bar   |
|  | with turn-down = nominal pressure range / adjusted range   |
| Permissible load   | $R_{max} \leq [(V_S - V_{S min}) / 0.02 A] \Omega$   |
| Influence effects  | supply: 0.05 % span / 10 V <span style="float: right;">permissible load: 0.05 % span / kΩ</span>   |
| Long term stability  | ≤ ± 0.1 % span / year  |
| Response time  | 200 msec – without consideration of electronic damping <span style="float: right;">measuring rate 5/sec</span>                                 |
| 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  | ≤ ± (0.02 x turn-down) % span / 10 K in compensated range -20 ... 80 °C  |
| Permissible temperatures   | medium: -25 ... 125 °C <span style="float: right;">environment: -20 ... 70 °C <span style="float: right;">storage: -30 ... 80 °C</span></span> |
| <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

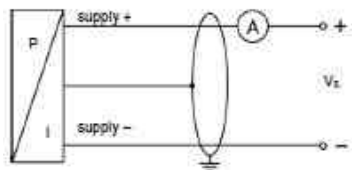
| Mechanical stability  |   |
|-----------------------|---|
| Vibration             | 5 g RMS (25 ... 2000 Hz)  |
| Shock                 | 100 g / 11 msec   |
| Materials             |   |
| Pressure port         | inch thread, DRD and flange version,<br>Varivent®, dairy pipe and clamp: stainless steel 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<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;<br>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 Tuchenhagen GmbH; Windows® is a registered trade mark of Microsoft Corporation

## ELECTRICAL CONNECTION

### Wiring diagram

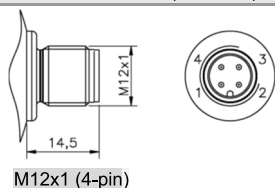
2-wire system (current)



### Pin configuration

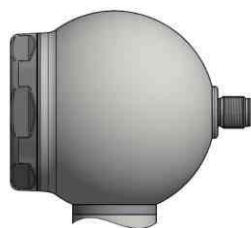
| Electrical connection | M12x1 (4-pin) | cable colours (IEC 60757) |
|-----------------------|---------------|---------------------------|
| Supply +              | 1             | wh (white)                |
| Supply -              | 3             | bn (brown)                |
| Shield                | plug housing  | ye/gn (yellow / green)    |

### Electrical connections ( in mm )



M12x1 (4-pin)

## DESIGNS



Side display

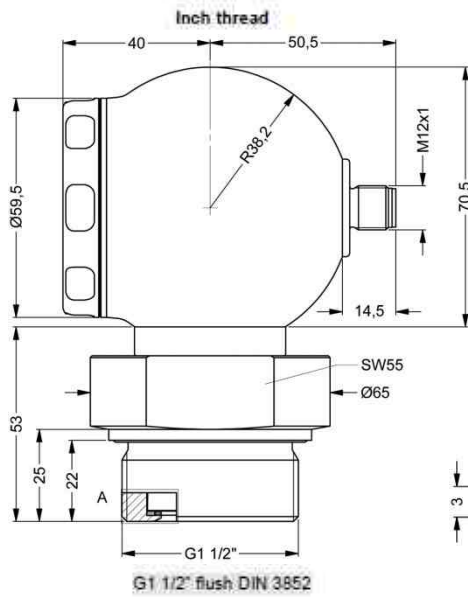


45° display (on request)

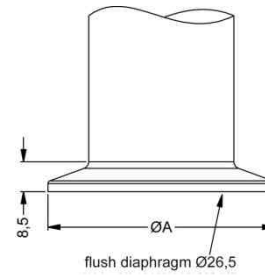
<sup>5</sup> all designs in combination with G1 1/2" flush in horizontal rotatable housing as standard; other mech. connections in rotatable housing on request



**DIMENSION DRAWINGS**

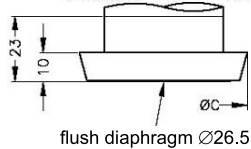


**Clamp (DIN 32676)**



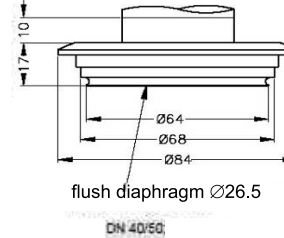
| dimensions in mm |           |           |
|------------------|-----------|-----------|
| size             | DN32      | DN50      |
| A                | 50.5      | 64        |
| $P_N$ [bar]      | $\leq 16$ | $\leq 16$ |

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

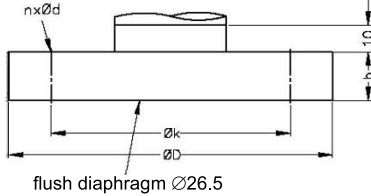


| dimensions in mm |       |       |
|------------------|-------|-------|
| size             | DN 40 | DN 50 |
| C                | 56    | 68.5  |

**Varivent<sup>®</sup>**

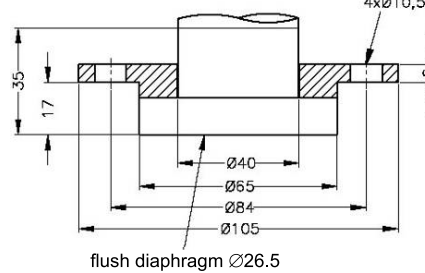


**Flange<sup>7</sup> (DIN 2501)**



| 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            | 15            | 18            |
| $P_N$            | $\leq 40$ bar | $\leq 40$ bar | $\leq 16$ bar |

**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  $P_N \leq 7$  bar



# Pressure transmitters

## ORDER CODE

CCA-Xact- [ ] [ ] [ ] - [ ] [ ] [ ] [ ] - [ ] [ ] [ ] [ ] - [ ] [ ] [ ] [ ] - [ ] [ ] [ ] [ ] - [ ] [ ] [ ] [ ] - [ ] [ ] [ ] [ ] - [ ] [ ] [ ] [ ] - [ ] [ ] [ ] [ ]

|  |   |   |   |   |   |   |   |  |  |  |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|--|--|--|---|---|---|---|---|---|
| <b>Pressure</b>  |   |   |   |   |   |   |   |  |  |  |   |   |   |   |   |   |
| Gauge  | 5 | 1 | E |   |   |   |   |  |  |  |   |   |   |   |   |   |
| <b>Input [bar]</b>   |   |   |   |   |   |   |   |  |  |  |   |   |   |   |   |   |
| 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 |   |   |   |   |  |  |  |   |   |   |   |   |   |
| <b>Design</b>  |   |   |   |   |   |   |   |  |  |  |   |   |   |   |   |   |
| Stainless steel ball housing - side display (IP 67)              |   |   |   |   |   |   |   |  |  |  | K | H |   |   |   |   |
| Stainless steel ball housing - 45° display (IP 67)               |   |   |   |   |   |   |   |  |  |  | K | 4 |   |   |   |   |
| <b>Output</b>  |   |   |   |   |   |   |   |  |  |  |   |   |   |   |   |   |
| 4 ... 20 mA / 2-wire   |   |   |   |   |   |   |   |  |  |  |   | 1 |   |   |   |   |
| Customer   |   |   |   |   |   |   |   |  |  |  |   | 9 |   |   |   |   |
| <b>Accuracy</b>  |   |   |   |   |   |   |   |  |  |  |   |   |   |   |   |   |
| 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 |   |   |   |   |
| <b>Electrical connection</b>                                     |   |   |   |   |   |   |   |  |  |  |   |   |   |   |   |   |
| Connector M12 x 1, 4-pin (IP 67) - metal                         |   |   |   |   |   |   |   |  |  |  |   | M | 1 | 0 |   |   |
| Customer   |   |   |   |   |   |   |   |  |  |  |   | 9 | 9 | 9 |   |   |
| <b>Mechanical connection</b>                                     |   |   |   |   |   |   |   |  |  |  |   |   |   |   |   |   |
| 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 (cup nut and mounting flange included) <sup>1</sup>  |   |   |   |   |   |   |   |  |  |  |   | D | R | D |   |   |
| Customer   |   |   |   |   |   |   |   |  |  |  |   | 9 | 9 | 9 |   |   |
| <b>Diaphragm</b>   |   |   |   |   |   |   |   |  |  |  |   |   |   |   |   |   |
| 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 |   |   |   |
| <b>Seals</b>   |   |   |   |   |   |   |   |  |  |  |   |   |   |   |   |   |
| Viton (FKM)  |   |   |   |   |   |   |   |  |  |  |   |   | 1 |   |   |   |
| EPDM   |   |   |   |   |   |   |   |  |  |  |   |   | 3 |   |   |   |
| Customer   |   |   |   |   |   |   |   |  |  |  |   |   | 9 |   |   |   |
| <b>Pressure port</b>   |   |   |   |   |   |   |   |  |  |  |   |   |   |   |   |   |
| Stainless steel 1.4404 (316 L)                                   |   |   |   |   |   |   |   |  |  |  |   |   | 1 |   |   |   |
| PVDF (only for mech.connection M00) <sup>2</sup>                 |   |   |   |   |   |   |   |  |  |  |   |   | B |   |   |   |
| Customer   |   |   |   |   |   |   |   |  |  |  |   |   | 9 |   |   |   |
| <b>Special version</b>   |   |   |   |   |   |   |   |  |  |  |   |   |   |   |   |   |
| Standard   |   |   |   |   |   |   |   |  |  |  |   |   |   | 0 | 0 | 0 |
| Customer   |   |   |   |   |   |   |   |  |  |  |   |   |   | 9 | 9 | 9 |

!!! When you make an order it is necessary to fill the questionnaire for transmitters with separators!!!

**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 - for pressure port in PVDF the operation medium temperature is -25 ... 60 °C

Manufacturer reserves the right to change sensor specifications without further notice.