



### Features

- Measuring ranges 0...1 bar up to 0...400 bar
- Linearity error including hysteresis <+ 0.2 % f.s.
- Piezoresistive measuring system
- Internal diaphragm (type series CB60 . .)
- Flush mounted diaphragm (type series CE61 . .)
- Wetted parts of stainless steel; completely welded
- Stainless steel housing as standard or field housing
- Degree of protection IP 65, IP 67 option
- Output signal: 4...20 mA
- Process temperature up to 140 °C (short term, for sterilization)
- Explosion protection (gas)

### Application

The device converts pressure measurements into a load-independent current signal. Because of their robust design these transmitters are suitable for use in tough environments. The process temperature is allowed up to 140 °C (short term). The flush mounted diaphragm allows dead-zone free measuring.

The transmitters have extensive circuitry which ensures electromagnetic compatibility.

### Technical Data

#### Case design

##### Designs

- field housing IP 65 or IP 67, with cable gland
- right-angle plug DIN 43650, IP 65,
- cable connection, IP 67
- circular connector M12, IP 65

##### case material

- stainless steel material no. 1.4404/1.4305
- electronics encapsulated with silicone.
- Inner chamber aeration for measuring ranges < 16 bar over case thread or connection cable (depending on design)

#### Process connection

see page 2 and order code for variants.

Material-no.: 1.4404 for sleeve and diaphragm.

O-ring seal from NBR (type series CE6100)

#### Temperature ranges

limiting temperature range: -25...+70 °C

storage temperature range: -40...+90 °C

process temperature:

- standard: -10...+80 °C
- with temperature decoupler -10...+140 °C

(short term, for sterilization)

rated temperature range: 0...50 °C

#### System filling

foodstuff oil FD1 (USDA-H1 per FDA)

#### Measuring ranges/overrange limits

see order details

intermediate measuring ranges upon request

#### Response time

≤ 20 ms

#### Measuring accuracy

linearity error incl. hysteresis: <+ 0.2 % f.s.  
(<+ 0.3 % f.s. for measuring ranges ≥ 0...60 bar)

fixed-point adjustment

accuracy of adjustment: <± 0.2 % f.s.

temperature effect im compensated temperature range 0...50 °C:

- zero point < 0.2 %/10 K f.s.
- span < 0.2 %/10 K f.s.

other values upon request

#### Auxiliary energy supply

standard design:

- nominal voltage 24 V DC
- function range 6...30 V DC
- max. allowable operating voltage 30 V DC

#### Supply voltage influence

≤ 0.01 % f.s. / V

#### Signal output

4...20 mA, 2-wire circuitry

#### Current limitation in output signal

max. output current approx. 30 mA

#### Adjusting range

approx. ± 5 % f.s.

zero point and measuring span separately adjustable

#### Burden

##### 2-wire circuitry

standard design  $R_a = \frac{U_B - 6 V}{20 mA}$  (KOhm)

$U_B$  = operating voltage

$R_a$  = max. permissible burden resistance (incl. lead)

#### Burden influence

for 500 ohm burden change: ≤ 0.1 % f.s.

#### Ex approval

CENELEC approval according to ATEX explosion protection intrinsically safe

TÜV 00 ATEX 1557 X

II 2 G Ex ib IIC T6

- $U_{max}$  ≤ 30 V DC
- $I_{max}$  ≤ 150 mA
- $P_{max}$  ≤ 1 W
- $C_i$  ≤ 49 nF
- $L_i$  ≤ 33 µH

#### Weights

· case with connector

approx. 200 g

· field housing: + approx. 260 g

· with temperature decoupler

+ approx. 50 g

#### Installation position

any, standard: vertical

#### EMC test

· noise immunity according to EN 50082 section 2, version March 1995 issue for industry

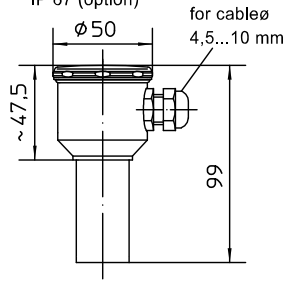
· emitted interference according to EN 50081 section 1, 1993 issue for residential and industrial areas

Device emits no radiation of its own

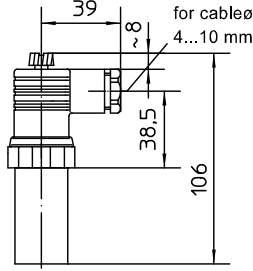
**Information on other models upon request or see order details**

**Dimensions/Designs**

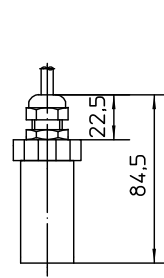
field housing  
material stainless steel,  
degree of protection IP65  
IP 67 (option)



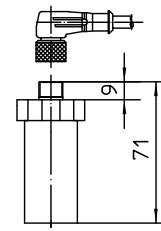
right angle plug  
per DIN 43650  
degree of protection IP65



cable connection  
degree of protection IP67  
(cable aeration)



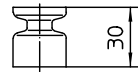
circular connector M12  
degree of protection IP65



angular screw joint  
(accessories  
upon request)

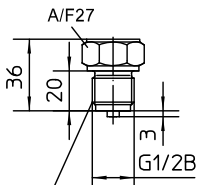
direct  
for process temperatures  
up to 80°C

temperature decoupler  
for process temperatures up to 140°C  
(short term, for sterilization)



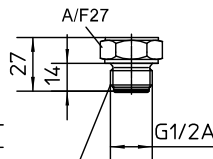
**Process connections**

type series CB6000  
internal diaphragm



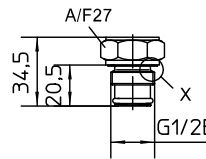
connection per  
DIN EN 837-1

type series CE6100  
flush mounted diaphragm



connection per  
DIN 3852 model A

type series CE6100  
flush mounted diaphragm and with O-ring seal



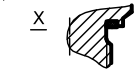
X

X

X

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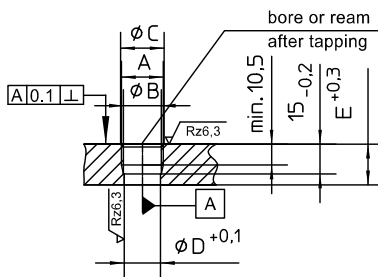
X



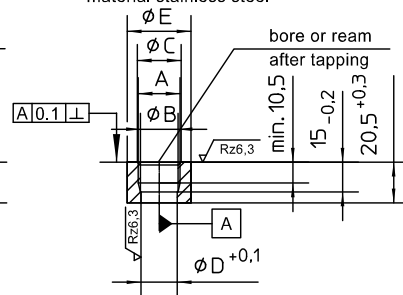
additional gasket  
per DIN 3852-11 model E

**screw-in hole/welded socket for flush mounted diaphragm with O-ring (type series CE6100)**

screw-in hole  
(process side)



welded socket  
material stainless steel



| A        | Ø B  | Ø C  | Ø D  | E    |
|----------|------|------|------|------|
| G 1/2    | 19.4 | 21.3 | 18.2 | 20.5 |
| M 22x1,5 | 20.7 | 22.6 | 18.2 | 21   |

| A     | Ø B  | Ø C  | Ø D  | Ø E | order code |
|-------|------|------|------|-----|------------|
| G 1/2 | 19.4 | 21.3 | 18.2 | 32  | MC1000-A1  |

**Connection diagram**

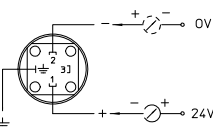
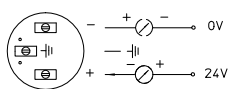
field housing

right-angle plug

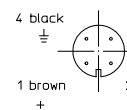
cable connection

circular connector M12

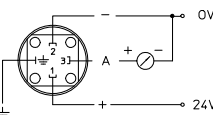
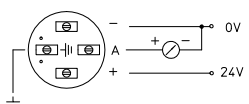
2-wire  
connection



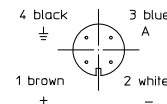
brown + supply  
white ± ground  
green - supply




3-wire  
connection



brown + supply  
white ± ground  
green - supply  
black A output



**Order Details** - please give additional specifications for models not listed -

| Pressure transmitter COMPACT for general applications |   |  |   |  |           |       |    |       |      |
|---|---|--|---|--|-----------|-------|----|-------|------|
| design version  | internal diaphragm  | · for process temperature up to + 80 °C (standard)                       |   |  |           | CB601 |    |       |      |
|   | flush mounted diaphragm   | · for process temperature up to + 140 °C (short term, for sterilization) |   |  |           | CB602 |    |       |      |
| Ex-protection   | · without   |  |   |  |           | 0     |    |       |      |
|   | ·  II 2 G Ex ib IIC T6 |  |   |  |           | 1     |    |       |      |
| meas. rang  | overload limit (bar)  | CB6000 connection<br>G 1/2 B/<br>1/2 NPT                                 | CE6100 connection<br>with O-ring<br>G 1/2 B/<br>M22x1.5 | CE6100 connection<br>DIN 3852<br>G 1/2 A |           |       |    |       |      |
|   | 0...1 bar   | 6  | x   | x  | -         | A1053 |    |       |      |
|   | 0...1.6 bar   | 10   | x   | x  | x         | A1054 |    |       |      |
|   | 0...2.5 bar   | 10   | x   | x  | x         | A1055 |    |       |      |
|   | 0...4 bar   | 10   | x   | x  | x         | A1056 |    |       |      |
|   | 0...6 bar   | 30   | x   | x  | x         | A1057 |    |       |      |
|   | 0...10 bar  | 30   | x   | x  | x         | A1058 |    |       |      |
|   | 0...16 bar  | 50   | x   | x  | x         | A1059 |    |       |      |
|   | 0...25 bar  | 50   | x   | x  | x         | A1060 |    |       |      |
|   | 0...40 bar  | 70   | x   | x  | x         | A1061 |    |       |      |
|   | 0...60 bar  | 100  | x   | x  | x         | A1062 |    |       |      |
|   | 0...100 bar   | 200  | x   | -  | x         | A1063 |    |       |      |
|   | 0...160 bar   | 200  | x   | -  | x         | A1064 |    |       |      |
|   | 0...250 bar   | 500  | -   | -  | x         | A1065 |    |       |      |
|   | 0...400 bar   | 500  | -   | -  | x         | A1066 |    |       |      |
|   | -1...0 bar <sup>2</sup>   | 10   | x   | x  | -         | A1086 |    |       |      |
|   | -1...0.6 bar <sup>2</sup>   | 10   | x   | x  | x         | A1087 |    |       |      |
|   | -1...1,5 bar <sup>2</sup>   | 10   | x   | x  | x         | A1088 |    |       |      |
|   | -1...3 bar <sup>2</sup>   | 16   | x   | x  | x         | A1089 |    |       |      |
|   | -1...5 bar <sup>2</sup>   | 30   | x   | x  | x         | A1090 |    |       |      |
|   | -1...9 bar <sup>2</sup>   | 30   | x   | x  | x         | A1091 |    |       |      |
|   | -1...15 bar <sup>2</sup>  | 50   | x   | x  | x         | A1092 |    |       |      |
|   | 0...1 bar abs   | 3  | x   | x  | -         | B1053 |    |       |      |
|   | 0...1.6 bar abs   | 6  | x   | x  | x         | B1054 |    |       |      |
|   | 0...2.5 bar abs   | 6  | x   | x  | x         | B1055 |    |       |      |
| 0...4 bar abs   | 6   | x  | x   | x  | B1056     |       |    |       |      |
| 0...6 bar abs   | 30  | x  | x   | x  | B1057     |       |    |       |      |
| 0...10 bar abs  | 30  | x  | x   | x  | B1058     |       |    |       |      |
| 0...16 bar abs  | 50  | x  | x   | x  | B1059     |       |    |       |      |
| 0...25 bar abs  | 50  | x  | x   | x  | B1060     |       |    |       |      |
| output signal   | · 4...20 mA, 2-wire   |  |   |  |           | H1    |    |       |      |
| process connection                                    | type series CB6000  | · G 1/2 B, inline diaphragm seal for meas. ranges 0...1 to 160 bar       |   |  |           | K1010 |    |       |      |
|   | type series CE6100  | · 1/2"NPT, inline diaphragm seal for meas. ranges 0...1 to 160 bar       |   |  |           | K1030 |    |       |      |
| case/<br>electrical connections                       | · field housing of stainless steel  | · IP 65, with cable gland  |   |  |           | T410  |    |       |      |
|   | · right angle plug according to DIN 43650, IP 65  | · IP 67, with cable gland  |   |  |           | T420  |    |       |      |
|   | cable connection IP 67  | · 2 m cable length   |   |  |           | T110  |    |       |      |
|   |   | · 5 m cable length   |   |  |           | T310  |    |       |      |
| · 10 m cable length                                   |   |  |   | T311                                     |           |       |    |       |      |
| · circular connector M12, IP 65 <sup>1</sup>          |   |  |   |  | T312      |       |    |       |      |
|   |   |  |   |  | T319      |       |    |       |      |
|   |   |  |   |  | T120      |       |    |       |      |
| <b>Order code (example):</b>                          |   |  |   |  | CB6010    | A1057 | H1 | K1010 | T410 |
| accessory for CE6100                                  | · welded socket of stainless steel G 1/2"   |  |   |  | MC1000-A1 |       |    |       |      |
|   | · welded socket of stainless steel G 1"   |  |   |  | MC1000-A3 |       |    |       |      |

x = available

<sup>1</sup> connectors with cable connection see product group D6<sup>2</sup> negative relative pressure ranges (e.g. -1...+1 bar) are adjusted at works to 0...100%, e.g. 4...20mA.

Long-term vacuum measurements at temperatures above +50°C may cause changes in the properties of the measurement device. Vacuum-proof designs are available upon request.