Pressure transmitter COMPACT
for diaphragm seal operation, robust
Type series CC60 . . -C

Features
- Measuring ranges 0…250 mbar up to 0…400 bar
- Linearity error including hysteresis <+ 0.2 % f.s.
- Piezoresistive measuring system
- Separating foil from stainless steel or special materials
- Completely encapsulated electronics
- Stainless steel housing as standard or field housing
- Degree of protection IP 65, IP 67 option
- Various output signals
- Process temperature up to 200 °C

Options
- Explosion protection for gases
- Classification per SIL 2
- Inspection certificate: material certificate as per EN 10204-3.1

Application
The pressure transmitter COMPACT acts as a highly accurate converter of pressure measurements to load-independent current signals. Because of various variants of process connections and materials these transmitters are especially suited for pressure measurement with aggressive, highly viscous, solidifying or crystallizing media. The completely welded stainless steel housing can be designed up to protection type IP 67. The use of temperature decouplers means that the COMPACT pressure transmitter can be used for process temperatures up to 200 °C.

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Technical Data

Case design
- field housing IP 65 or IP 67, with cable gland
- right-angle plug per DIN EN 175301-803-A (DIN 43650 Form A), IP 65
- cable connection, IP 67
- circular connector M12, IP 65
- case material stainless steel union nut: polyamide (with plug connector or cable connection for electr. connection) 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 3 and order code for variants
- material-Nr.: 1.4404 (316L) for the sleeves

Temperature ranges
- ambient temperature range: -25…+70 °C
- storage temperature range: -10…+90 °C
- process temperature: see order details

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.
- fixed-point adjustment accuracy of adjustment: <+ 0.2 % f.s.
- temperature effect im compensated temperature range: 0…50°C

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

b) process connection (diaphragm seal)
- flat diaphragm seal zero error
- DN 25/1” 4.8 mbar/10 K
- DN 32/1 1/2” 2.3 mbar/10 K
- DN 40 1.6 mbar/10 K
- DN 50/2” 0.6 mbar/10 K
- inline diaphragm seal zero error
- DN 25/1” 9.5 mbar/10 K
- DN 32/1 1/2” 4.1 mbar/10 K
- DN 40 3.9 mbar/10 K
- DN 50/2” 3.9 mbar/10 K

The specified zero error for the process connection is a guide value for a standard design. We can provide a detailed system calculation upon request. Systems with reduced diaphragm seal errors are also available.

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

Output signal
- 4…20 mA, 2-wire technology
- 0…20 mA, 3-wire technology
- 4…20 mA, 3-wire technology
- 0…10 V, 3-wire technology

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 circuity
- standard design: $R_b = \frac{U_m}{20\,mA}$ (KOhm)
- $U_m$ = operating voltage
- $R_b$ = max. permissible burden resistance (incl. lead)

Functional safety
- EN 61508, classification per SIL 2,
- TÜV-Reg.-No. 44 799 13190204
Burden influence
for 500 ohm burden change: \( \leq 0.1 \% \text{ f.s.} \)

Ex-approval
CENELEC approval according to ATEX
TÜV 00 ATEX 1557 X
marking:
\( \mathcal{E} \) II 2 G Ex ib IIC T6 Gb
- \( U_{\text{max}} \leq 30 \text{ V DC} \)
- \( I_{\text{max}} \leq 150 \text{ mA} \)
- \( P_{\text{max}} \leq 1 \text{ W} \)
- \( C_{\text{f}} \leq 49 \text{ nF} \)
- \( L_{\text{i}} \leq 33 \mu\text{H} \)

Weights (without diaphragm seal)
- field housing: approx. 460 g
- case with connector: approx. 200 g

Installation position
any

Dimensions

- field housing material: stainless steel
  degree of protection IP 65 (IP 67 option)
  \( \phi 50 \) mm
- right angle plug
  DIN EN 175301-803-A
  (DIN 43850 Form A)
  degree of protection IP 65
- cable connection
  degree of protection IP 67
  (cable aeration)
- circular connector M12
  degree of protection IP 65

Process connection
for details see order details
and relevant data sheets,
other models upon request

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

Weights (without diaphragm seal)
- field housing: approx. 460 g
- case with connector: approx. 200 g

Installation position
any
Connection diagram

Standard position of el. connections. Pls. specify different position.
Order details

### Pressure transmitter COMPACT for chemical/petrochemical, type series CC6000-C

<table>
<thead>
<tr>
<th>Ex protection</th>
<th>without</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>meas. range</td>
<td>overload limit (bar)</td>
<td></td>
</tr>
<tr>
<td>0...250 mbar²</td>
<td>1</td>
<td>A1010</td>
</tr>
<tr>
<td>0...400 mbar</td>
<td>3</td>
<td>A1011</td>
</tr>
<tr>
<td>0...0.6 bar</td>
<td>3</td>
<td>A1052</td>
</tr>
<tr>
<td>0...1 bar</td>
<td>3</td>
<td>A1053</td>
</tr>
<tr>
<td>0...1.6 bar</td>
<td>10</td>
<td>A1054</td>
</tr>
<tr>
<td>0...2.5 bar</td>
<td>10</td>
<td>A1055</td>
</tr>
<tr>
<td>0...4 bar</td>
<td>20</td>
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<tr>
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<tr>
<td>0...10 bar</td>
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<td>A1066</td>
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<td>-250...0 mbar²</td>
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<td>-400...0 mbar²</td>
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<td>A1028</td>
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<td>-0.6...0 bar</td>
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<td>-1...0 bar</td>
<td>10</td>
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<td>-1...0.6 bar</td>
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<tr>
<td>-1...1.5 bar</td>
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<td>A1089</td>
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<td>-1...3 bar</td>
<td>20</td>
<td>A1090</td>
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<td>A1091</td>
</tr>
<tr>
<td>-1...1.5 bar</td>
<td>60</td>
<td>A1092</td>
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<tr>
<td>0...1 bar abs</td>
<td>3</td>
<td>B1053</td>
</tr>
<tr>
<td>0...1.6 bar abs</td>
<td>10</td>
<td>B1054</td>
</tr>
<tr>
<td>0...2.5 bar abs</td>
<td>10</td>
<td>B1055</td>
</tr>
<tr>
<td>0...4 bar abs</td>
<td>10</td>
<td>B1056</td>
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<tr>
<td>0...6 bar abs</td>
<td>60</td>
<td>B1057</td>
</tr>
<tr>
<td>0...10 bar abs</td>
<td>60</td>
<td>B1058</td>
</tr>
<tr>
<td>meassure range as in writing</td>
<td>T9999</td>
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</tbody>
</table>

### Measuring range as in writing

<table>
<thead>
<tr>
<th>meassure range</th>
<th>output signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 4...20 mA, 2-wire technology, standard</td>
<td>H1</td>
</tr>
<tr>
<td>- 0...20 mA, 3-wire technology</td>
<td>H2</td>
</tr>
<tr>
<td>- 4...20 mA, 3-wire technology</td>
<td>H3</td>
</tr>
<tr>
<td>- 0...10 V, 3-wire technology</td>
<td>H4</td>
</tr>
</tbody>
</table>

### Ex protection

<table>
<thead>
<tr>
<th>Ex protection</th>
<th>WITHOUT</th>
<th>0</th>
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</thead>
<tbody>
<tr>
<td>Design</td>
<td>for process temperature to + 140 °C</td>
<td>CC601.-C</td>
</tr>
<tr>
<td></td>
<td>for process temperature to + 200 °C</td>
<td>CC602.-C</td>
</tr>
</tbody>
</table>

### Output signal

<table>
<thead>
<tr>
<th>Output signal</th>
<th>Case/ Electrical connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 4...20 mA, 2-wire technology, standard</td>
<td>field housing of stainless steel, with cable gland</td>
</tr>
<tr>
<td>- 0...20 mA, 3-wire technology</td>
<td>right angle plug according to DIN EN 175301-803-A (DIN 43650 Form A), IP 65</td>
</tr>
<tr>
<td>- 4...20 mA, 3-wire technology</td>
<td>circular connector M12, IP 65</td>
</tr>
<tr>
<td>- 0...10 V, 3-wire technology</td>
<td></td>
</tr>
</tbody>
</table>

### Case/ Electrical connections

<table>
<thead>
<tr>
<th>Case/ Electrical connections</th>
<th>Case/ Electrical connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 2 m cable length</td>
<td>- 2 m cable length</td>
</tr>
<tr>
<td>- 5 m cable length</td>
<td>- 5 m cable length</td>
</tr>
<tr>
<td>- 10 m cable length</td>
<td>- 10 m cable length</td>
</tr>
<tr>
<td>- cable length as in writing</td>
<td>- cable length as in writing</td>
</tr>
</tbody>
</table>

1. negative relative pressure ranges (e.g. -1...+1 bar) are adjusted to 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.

2. plug connector with cable see product group D6 (accessories)

3. low pressure ranges with increased temperature influence (zero point and span): max. = 0.4 %/10K

4. not valid for absolute pressure.
### Flange with Diaphragm Extension (Trunk Type Design)

<table>
<thead>
<tr>
<th>DN</th>
<th>PN</th>
<th>Connection Type</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>10/40</td>
<td>G 3/4 A</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>10/40</td>
<td>G 1 A</td>
<td></td>
</tr>
<tr>
<td>1/2 A</td>
<td></td>
<td>G 2 A</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>G 1 A</td>
<td></td>
</tr>
</tbody>
</table>

### Sealing Surface DIN EN 1092-1 Form B1 (DIN 2526 Form C/D)

<table>
<thead>
<tr>
<th>DN</th>
<th>PN</th>
<th>Thread</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>64/100</td>
<td>G 3/4 A</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>64</td>
<td>G 1 1/2 A</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>G 2 A</td>
<td></td>
</tr>
</tbody>
</table>

### Sealing Surface Form B2 (Form E)

- In case of special diaphragm material
- Further DN/PN upon request

### Sealing Surface ASME B16.5 RF125 - 250 AA

<table>
<thead>
<tr>
<th>DN</th>
<th>PN</th>
<th>Connection Type</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>150</td>
<td>ASME</td>
<td></td>
</tr>
<tr>
<td>1 1/2</td>
<td></td>
<td>ASME</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>ASME</td>
<td></td>
</tr>
<tr>
<td>2 1/2</td>
<td></td>
<td>ASME</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>ASME</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>ASME</td>
<td></td>
</tr>
</tbody>
</table>

### Sealing Surface ASME B16.5 RF500

- In case of special diaphragm material
- Further DN/PN upon request

### Wetted Parts

- Steel Mat. no. 1.4404 (316L)
- Tantalum
- Hastelloy C276
- Other materials upon request

### Liquid Filling

- Foodstuff oil FD1, standard
- Foodstuff oil FD1, pls specify temperature, max. +10°C...
- Other liquids upon request

### Operating Temperature Range

- L22: +10°C...+140°C, standard
- L23: -10°C...+200°C

### Additional Features

- Special materials
- System safety per EN 61508, classification per SIL 2

### Example

- Pressure transmitter
- Process connection

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1. Standard st. steel 1.4404 (316L), special materials upon request
2. To be specified for flange with trunk-type design, only
3. For ideal system design the exact operating temperature should be specified
4. For inline diaphragm seal (cell design) only