



Application area

- Chemical industry
- Petrochemical industry

Technical Data

Case design

Designs

- 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.
(<+ 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

a) case

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

b) process connection (diaphragm seal) depending on design

| | |
|------------------|-----------------|
| 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

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.

Adjusting range

approx. ± 5 % f.s.; zero point and measuring span separately adjustable

Burden

2-wire circuitry
standard design $R_a = \frac{U_B - 6 \text{ V}}{20 \text{ mA}}$ (KOhm)
 U_B = operating voltage
 R_a = 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: ≤ 0.1 % f.s.

Ex-approval

CENELEC approval according to ATEX
TÜV 00 ATEX 1557 X

marking:

II 2 G Ex ib IIC T6 Gb

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

Weights (without diaphragm seal)

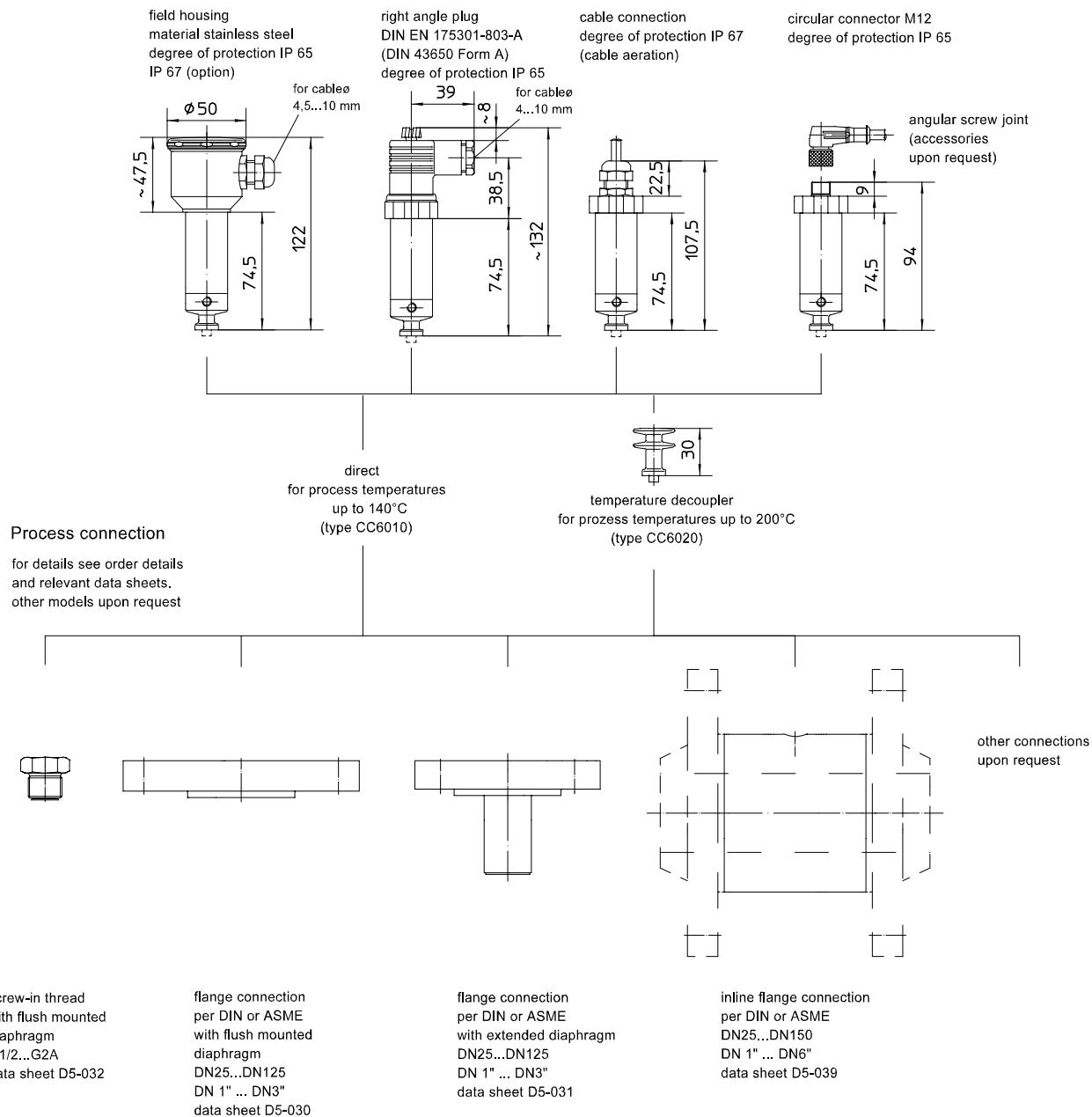
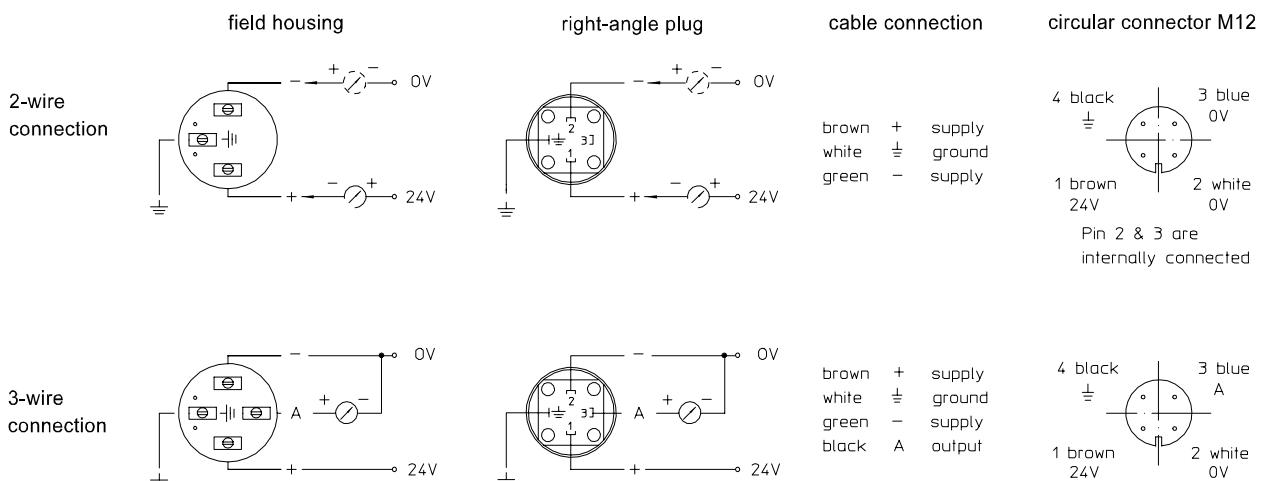
- field housing: approx. 460 g
- case with connector: approx. 200 g

Installation position

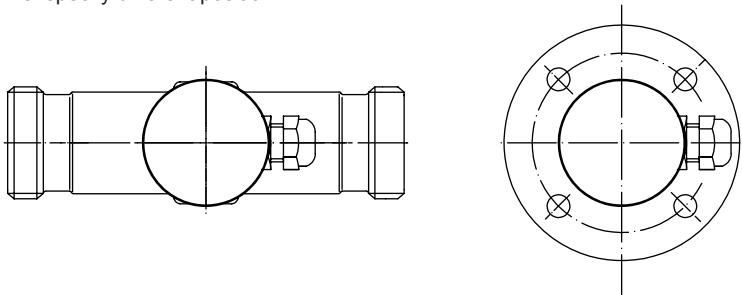
any

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

Dimensions/case/process connection**Connection diagram**

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



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

| Pressure transmitter COMPACT for chemical/petrochemical, type series CC6000-C | | |
|---|---|---|
| design | · for process temperature to + 140 °C | CC601 ..C |
| | · for process temperature to + 200 °C | CC602 ..C |
| Ex protection | · without | 0 |
| | · Ex II 2 G Ex ib IIC T6 Gb | 1 |
| meas. range | meas. range | overload limit (bar) |
| | 0...250 mbar ³ | 1 |
| | 0...400 mbar | 3 |
| | 0...0.6 bar | 3 |
| | 0...1 bar | 3 |
| | 0...1.6 bar | 10 |
| | 0...2.5 bar | 10 |
| | 0...4 bar | 20 |
| | 0...6 bar | 60 |
| | 0...10 bar | 60 |
| | 0...16 bar | 60 |
| | 0...25 bar | 60 |
| | 0...40 bar | 100 |
| | 0...60 bar | 200 |
| | 0...100 bar | 200 |
| | 0...160 bar | 250 |
| | 0...250 bar | 750 |
| | 0...400 bar | 750 |
| | -250...0 mbar ³ | 1 |
| | -400...0 mbar ³ | 3 |
| | -0.6...0 bar ¹ | 3 |
| | -1...0 bar ¹ | 3 |
| | -1...0.6 bar ¹ | 10 |
| | -1...1.5 bar ¹ | 10 |
| | -1...3 bar ¹ | 20 |
| | -1...5 bar ¹ | 20 |
| | -1...9 bar ¹ | 60 |
| | -1...15 bar ¹ | 60 |
| | 0...1 bar abs | 3 |
| | 0...1.6 bar abs | 10 |
| | 0...2.5 bar abs | 10 |
| | 0...4 bar abs | 10 |
| | 0...6 bar abs | 60 |
| | 0...10 bar abs | 60 |
| measuring range as in writing | | A9999 |
| output signal | · 4...20 mA, 2-wire technology, standard | H1 |
| | · 0...20 mA, 3-wire technology | H2 |
| | · 4...20 mA, 3-wire technology | H3 |
| | · 0...10 V, 3-wire technology | H4 |
| case/ electrical connections | field housing of stainless steel, with cable gland | IP 65, measuring ranges ≤ 16 bar, only ⁴ |
| | | IP 67 |
| | right angle plug according to DIN EN 175301-803-A (DIN 43650 Form A), IP 65 | T110 |
| | cable connection | · 2 m cable length |
| | IP 67 | · 5 m cable length |
| | | · 10 m cable length |
| | | · cable length as in writing |
| | | · circular connector M12, IP 65 ² |

continued next page

¹ 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

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

Order Details (continued) - please give additional specifications for models not listed -

| | | | | | | | |
|--|---|--|--|----|------|--------|--|
| process | screw-in thread | · G 3/4 A · G 1 A · G 1 1/2 A · G 2 A | | | | | DE1280 DE1380 DE1580 DE1680 |
| | | sealing surface DIN EN 1092-1 form B1 (DIN 2526 form C/D) sealing surface form B2 (form E) in case of special diaphragm material | | | | | DA1 ... DA2 ... |
| | | DIN · DN 25, PN 10/40 · DN 25, PN 64/100 · DN 50, PN 10/40 · DN 50, PN 64 · DN 80, PN 10/40 · further DN/PN upon request | | | | | ... 120 ... 150 ... 420 ... 430 ... 620 |
| | | sealing surface ASME B16.5 RF125 - 250 AA sealing surface ASME B16.5 RFSF, in case of special diaphragm mat. | | | | | DA51 ... DA5 ... |
| | flange with diaphragm extension (trunk type design) | ASME · DN 1", PN 150 psi · DN 1", PN 300 psi · DN 2", PN 150 psi · DN 2", PN 300 psi · DN 3", PN 150 psi · DN 3", PN 300 psi · further DN/PN upon request | | | | | 110 120 310 320 510 520 |
| | | sealing surface DIN EN 1092-1, form B1 (DIN 2526 Form C/D) · DN 25, PN 10-40 · DN 50, PN 25-40 · DN 80, PN 10-40 · DN 100, PN 10-16 · DN 100, PN 25-40 · DN 125, PN 10-16 · DN 125, PN 25-40 | | | | | DB1120 DB1420 DB1620 DB1710 DB1720 DB1810 DB1820 |
| | | sealing surface ASME B16.5 RFSF · DN 1", PN 300 psi · DN 2", PN 300 psi · DN 3", PN 150 psi · DN 3", PN 300 psi · DN 4", PN 150 psi · DN 4", PN 300 psi | | | | | DB5120 DB5320 DB5510 DB5520 DB5610 DB5620 |
| | | DIN EN 1092-1 with plain sealing surface, form B2 · DN 25 · DN 40 · DN 50 · DN 65 · DN 80 · DN 100 · DN 125 · DN 150 · further DN/PN upon request | | | | | DP2180 DP2380 DP2480 DP2580 DP2680 DP2780 DP2880 DP2980 |
| | | Inline diaphragm seal (cell design) · DN 1" · DN 1 1/2" · DN 2" · DN 2 1/2" · DN 3" · DN 4" · DN 5" · DN 6" · further DN/PN upon request | | | | | DP6180 DP6280 DP6380 DP6480 DP6580 DP6680 DP6780 DP6880 |
| | | wetted parts ¹ · st. steel mat. no. 1.4404/1.4435 (316L) · st. steel mat. no. 1.4435 (316L) · Tantalum · Hastelloy C276 other materials upon request | | | | | A4001 A4007 A4002 A4003 A4009 |
| | system filling ³ | liquid filling · foodstuff oil FD1, standard · foodstuff oil FD1, pls specify temperature, max. other liquids upon request | operating temperature range +10...+140 °C, standard -10...+200 °C | | | | L22 L23 |
| | immersion length L ⁴ | · 60 mm standard at ≥ DN 80 (3") · 100 mm standard at ≤ DN 65 (2 1/2") | | | | | F1 |
| | length of trunk ² material no. 1.4571 (316Ti) | · h = 50 mm · h = 100 mm · h = 150 mm · h = 200 mm · h (mm): special length | | | | | F1 F2 F3 F4 F9 |
| additional features (to be indicated in case of need, only) | | | | | | | |
| materials certificate acc. to EN 10204-3.1, wetted parts (stainless steel) | | | | | | | |
| functional safety per EN 61508, classification per SIL 2 | | | | | | | |
| example: | pressure transmitter | CC6011-C | A1058 | H1 | T410 | DA1420 | A4001 |
| | process connection | | | | | L22 | |

¹ standard st. steel 1.4404 (316L), special materials upon request² to be specified for flange with trunk-type design, only³ for ideal system design the exact operating temperature should be specified⁴ for inline diaphragm seal (cell design) only