



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: -40...+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

diaphragm	seal zero error
flat diaphragm	
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 circuitry

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
- Output signal: 4...20 mA
- Process temperature up to 200 °C

Options

- Explosion protection for gases
- Classification per SIL 2
- Inspection certificate: material certificate as per DIN 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 $R_a = \frac{U_B - 6 V}{20 mA}$ (KOhm)
 U_B = operating voltage
 R_a = max. permissible burden resistance (incl. lead)

Functional safety

EN 61508, classification per SIL 2,
 TÜV-Reg.-No. 44 207 1038 1144

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

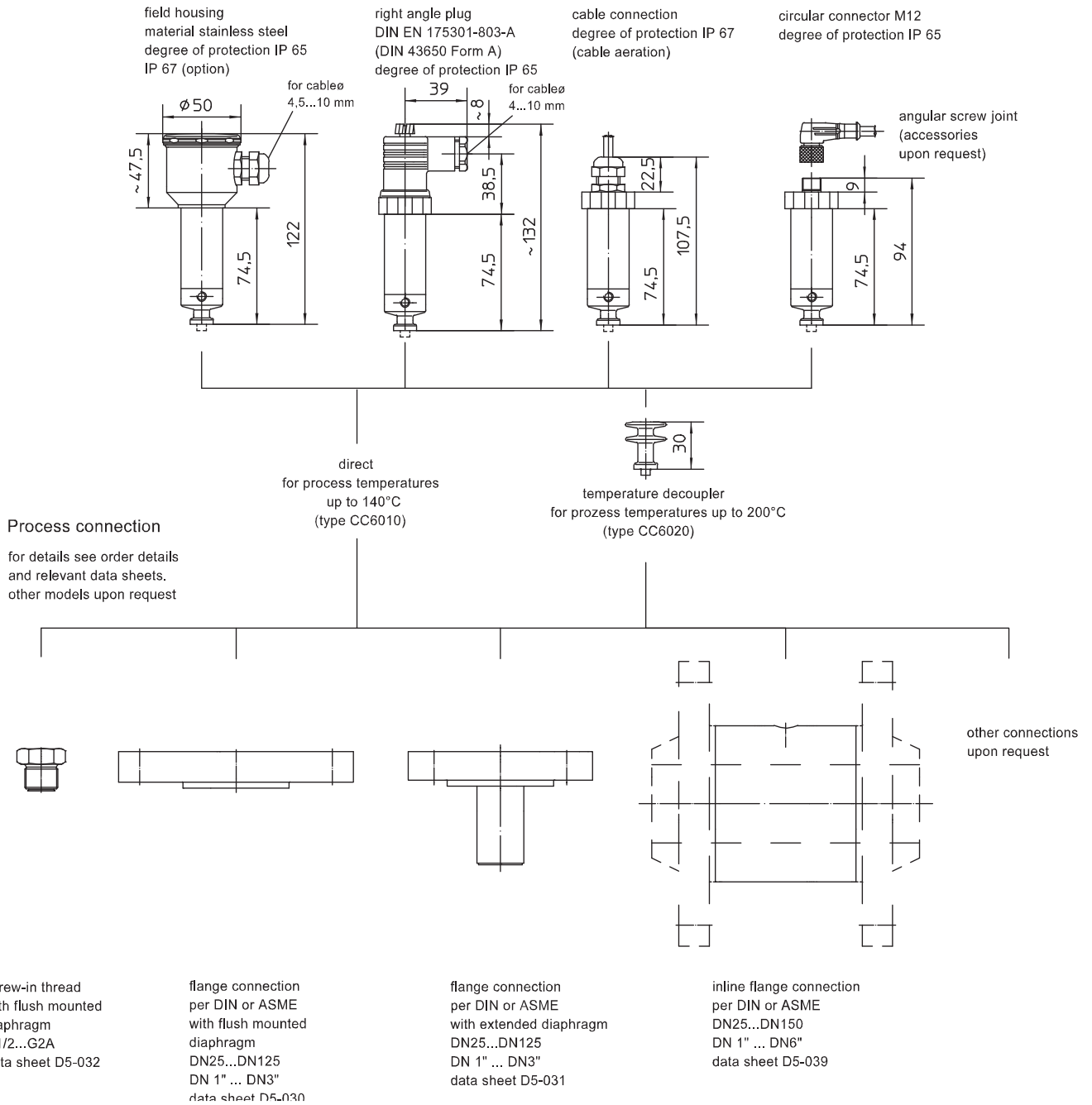
Installation position

any

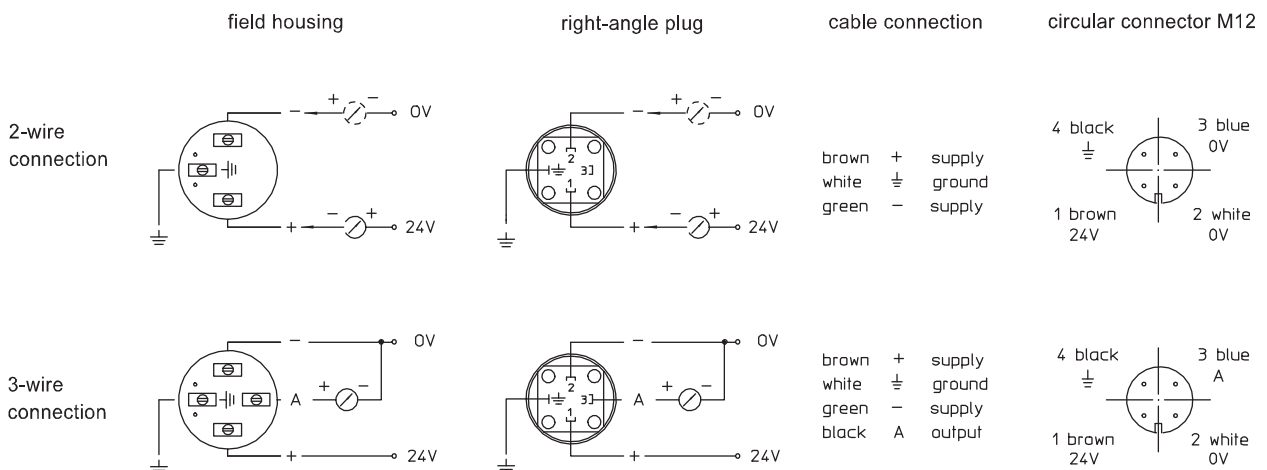
EMC test

- 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

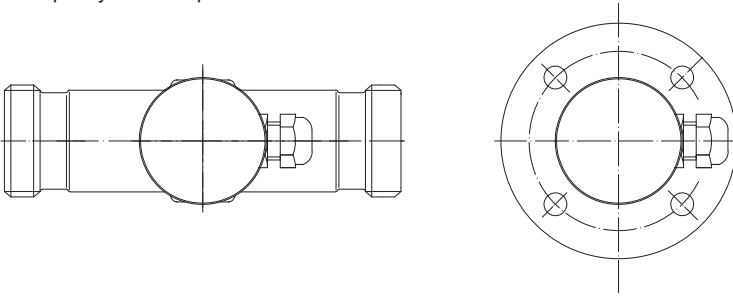
Dimensions/case/process connection




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 (standard)			CC601	.-C	
	· for process temperature to + 200 °C			CC602	.-C	
Ex protection	· without			0		
	·  II 2 G Ex ib IIC T6 Gb			1		
meas. range	meas. range	overload limit (bar)				
	0...250 mbar ³	1			A1010	
	0...400 mbar	3			A1011	
	0...0.6 bar	3			A1052	
	0...1 bar	3			A1053	
	0...1.6 bar	10			A1054	
	0...2.5 bar	10			A1055	
	0...4 bar	20			A1056	
	0...6 bar	60			A1057	
	0...10 bar	60			A1058	
	0...16 bar	60			A1059	
	0...25 bar	60			A1060	
	0...40 bar	100			A1061	
	0...60 bar	200			A1062	
	0...100 bar	200			A1063	
	0...160 bar	250			A1064	
	0...250 bar	750			A1065	
	0...400 bar	750			A1066	
	-250...0 mbar ³	1			A1027	
	-400...0 mbar ³	3			A1028	
	-0.6...0 bar ¹	3			A1085	
	-1...0 bar ¹	3			A1086	
	-1...0.6 bar ¹	10			A1087	
	-1...1.5 bar ¹	10			A1088	
	-1...3 bar ¹	20			A1089	
	-1...5 bar ¹	20			A1090	
	-1...9 bar ¹	60			A1091	
	-1...15 bar ¹	60			A1092	
	0...1 bar abs	3			B1053	
	0...1.6 bar abs	10			B1054	
	0...2.5 bar abs	10			B1055	
	0...4 bar abs	10			B1056	
	0...6 bar abs	60			B1057	
0...10 bar abs	60			B1058		
measuring range as in writing					A9999	
output signal	· 4...20 mA, 2-wire (standard)				H1	
case/ electrical connections	· field housing of stainless steel, with cable gland	IP 65, measuring ranges ≤ 16 bar, only			T410	
		IP 67			T420	
	· right angle plug according to DIN EN 175301-803-A (DIN 43650 Form A), IP 65					T110
	cable connection IP 67	· 2 m cable length			T310	
		· 5 m cable length			T311	
		· 10 m cable length			T312	
· cable length as in writing					T319	
· circular connector M12, IP 65 ²					T120	
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



Features

- Flush-mounted separating diaphragm of stainless steel, welded by laser
- Hygienic sealing (no elastomer)
- Fast and easy mounting
- The measuring system can be positioned as required by means of the rotary screwed plug
- Minimum mounting torque error/no torsion
- Connection of measuring instrument:
 - directly screwed
 - with capillary

Options

- Material certificate acc. to DIN EN 10204-3.1
- Hygienic design with advanced surface quality
- Special materials upon request

Application area

- Food industry
- Pharmaceutical industry
- Biotechnology

Application

Suitable for mounting to pressure measuring instruments. The rotary connection allows the measuring system to be positioned on site, even when welding sleeves have already been mounted. The diaphragm seal for screw-in thread HYGIENIC, no gasket, is used mainly for dead-zone free measuring.

Technical Data

Process connection

G 1 A adjustable, metal-to-metal joint. The rotary screw-in design means that no torsional forces are produced that could damage the sealing surface.
Tightening torque:
20 Nm, max. nominal pressure 10 bar
50 Nm, max. nominal pressure 50 bar

Diaphragm seal material

basic body and screwed plug stainless steel mat.-no. 1.4404 (316L)

Separating diaphragm

material st. steel mat. no. 1.4435 (316), further materials upon request

Nominal pressure

max. 50 bar

Mounting torque errors

1 mbar bei einem tightening torque von 20 Nm.

Pressure ranges

for mounting to pressure measuring instruments 0...0.4 bar up to 0...40 bar

Measuring instrument connection

- directly screwed
 - with capillary
- see order code
material stainless steel

Process temperature

dependent on measuring system, diaphragm seal filling liquid and installation, max. 250 °C.

Diaphragm seal filling liquid

see data sheet D5-003.
Standard according to order code

Hygienic design

surface formation of wetted parts as per EHEDG guidelines
($R_a \leq 0.8 \mu\text{m}$)

Installation instructions

see operating instructions BTA-062

Weights

diaphragm seal and screwed plug
approx. 0.3 kg

Measuring instrument connection

directly welded
Code: A400

temperature decoupler

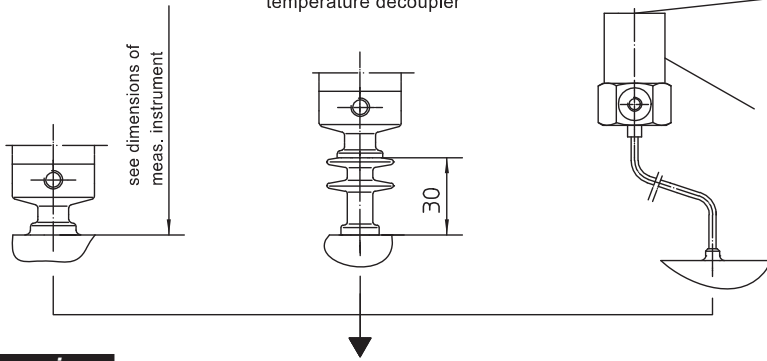
capillary
welded Code: B40../B50..

pressure transmitter

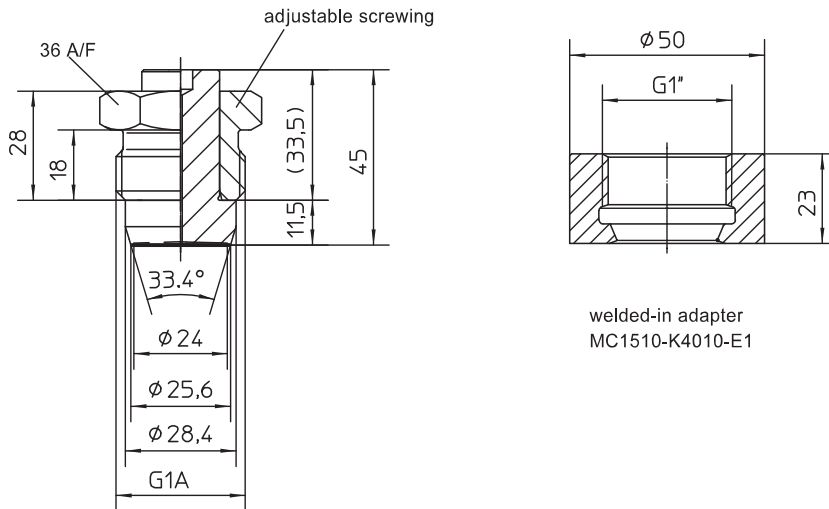
pressure transmitter with
temperature decoupler

connection
welded/screwed
per DIN EN 837-1

prepared for
wall bracket see
data sheet no.
D6-032



Dimensions



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

Diaphragm seal for food/pharmaceutical/biotechnology																					
design	screw-in thread HYGIENIC, no gasket																				
surface roughness	· standard																				
	· hygienic version as per EHEDG guidelines																				
process connection	· G 1 A adjustable, no gasket																				
material sealing surface	· stainless steel mat.-no. 1.4404 (316L)																				
	· variant																				
diaphragm material	· stainless steel mat.-no. 1.4436 (316)																				
	· variant																				
connection of measuring instrument	· directly welded																				
	· with capillary, welded																				
	· with capillary and stainless steel protective tube, welded																				
system filling ¹	filling liquid	temperature range ²																			
	· foodstuff oil FD1 (Standard)	+10...+140 °C																			
	· foodstuff oil FD1, pls. specify temperature, max.	-40...+200 °C																			
	· glycerine/water FGW	-20...+120 °C																			
material certificate acc. to DIN EN 10204- 3.1, wetted parts																				W1020	
diaphragm seal electropolished																				W4035	
order code (example):																					

accessories

welded socket	· Ø 50 mm, G1", HYGIENIC, no gasket, stainless steel mat.-no. 1.4404 (316L)	MC1510-K4010-E1
---------------	---	-----------------

¹ Please check data sheet D5-003 for further information.
Please state temperature range to allow an accurate calculation of the system.
² max. temperature of liquid filling for abs. pressure > 1 bar