Pressure transmitter COMPACT
for general application, Type Series CB60 . ./CE61 . .

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)

Options

- Explosion protection for gases
- Classification per SIL 2
- Approval German Lloyd

Application area

· Chemical and petrochemical industry
· Process engineering
· General process technology

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 per DIN EN 175301-803-A (DIN 43650, model A), IP 65
· cable connection, IP 67
· circular connector M12, IP 65
case material stainless steel
electronics encapsulated with silicone.
Inner chamber aeration for measuring ranges < 16 bar over case thread or connection cable (depending on design)

Process connection

Variant / material see order code

Measuring system

Sensor type	piezoresistiv	thin film
Sensor filling	foodstuff oil as per FDA	---

Materials (wetted parts)

Sensor type	piezoresistiv	thin film
Sensor diaphragm	1.4404/1.4435 (316L)	1.4542 (630)
Socket	1.4404/1.4435 (316L)	1.4301/1.4404 (304/316L)

Temperature ranges

ambient 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)
other temperature ranges upon request

Measuring ranges/overload 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

Technical data

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.

Functional safety

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

Ex approval

CENELEC approval according to ATEX
TÜV 00 ATEX 1557 X
marking:
Ex II 2 G Ex ib IIC T6 Gb

- U_{max} ≤ 30 V DC
- I_{max} ≤ 150 mA
- P_{max} ≤ 1 W
- Ci ≤ 49 nF
- Li ≤ 33 µH

GL approval (German Lloyd)

per certificate no. 58798-08 HH

Weights

- case with connector approx. 200 g
- field housing: + approx. 260 g
- with temperature decoupler + approx. 50 g

Installation position

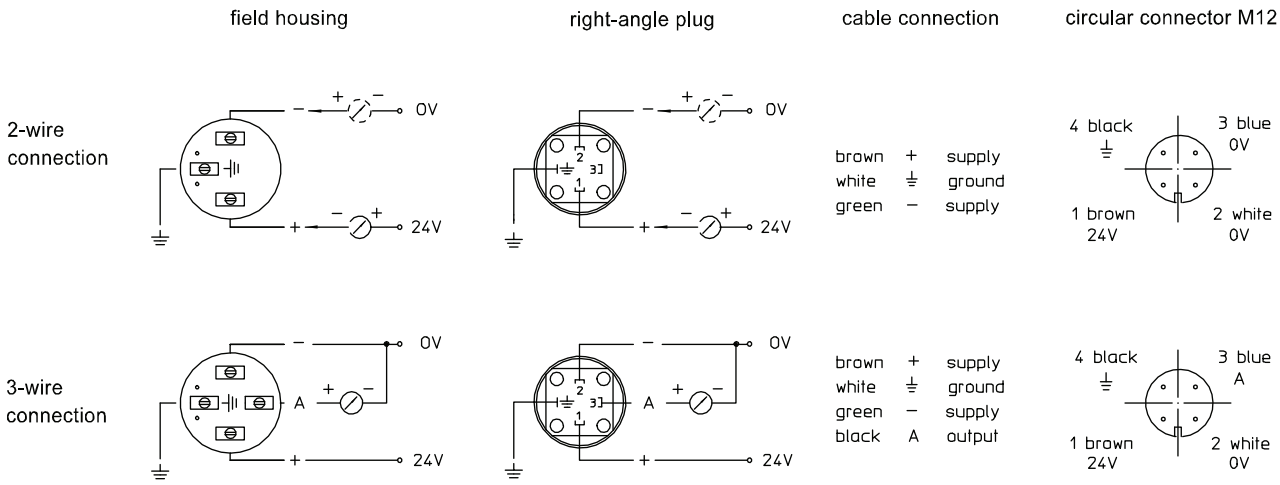
any

EMC test

- noise immunity according to EN 50082 section 2, version March 1995 issue for industry
- emitted interference according to EN 50081section 1, 1993 issue for residential and industrial areas

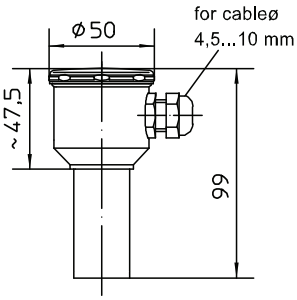
Device emits no radiation of its own

Connection diagram

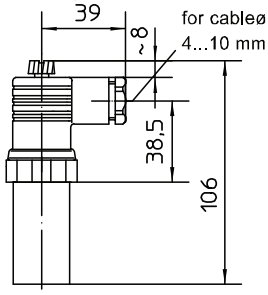


Dimensions/Designs

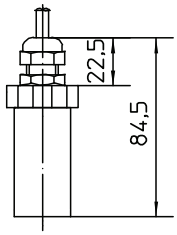
field housing
material stainless steel,
degree of protection IP 65
IP 67 (option)



right angle plug
DIN EN 175301-803-A
(DIN 43650 Form A)
degree of protection IP 65

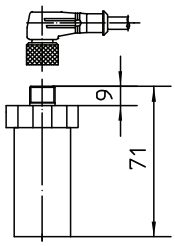


cable connection
degree of protection IP 67
(cable aeration)

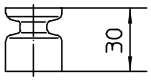


circular connector M12
degree of protection IP 65

angular screw joint
(accessories
upon request)



direct
for process temperatures
up to 80°C



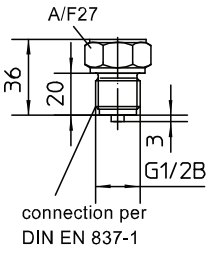
temperature decoupler
for process temperatures up to 140°C
(short term, for sterilization)

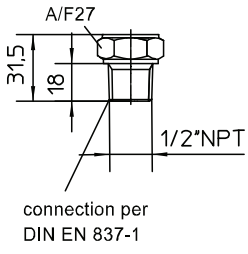
Process connections

Process connections piezoresistiv

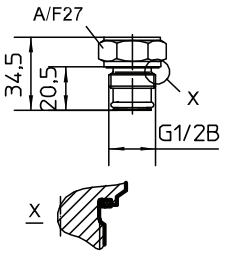
Process connections thin film

type series CB6000
internal diaphragm



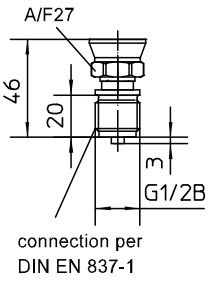


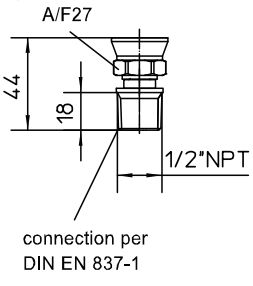
type series CE6100
flush mounted diaphragm
and with O-ring seal



additional gasket
per DIN 3852-11 model E

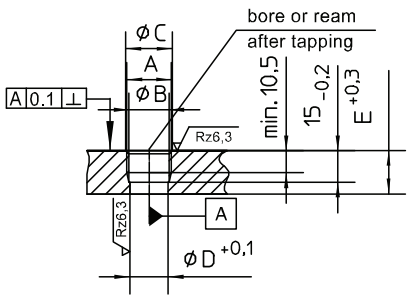
type series CB6000
internal diaphragm





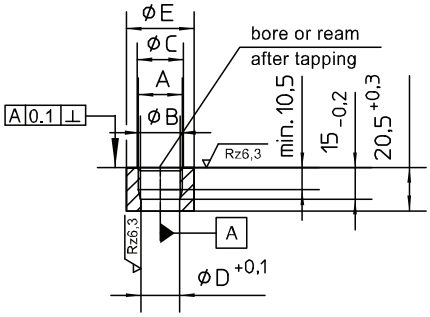
screw-in hole/welded socket for flush mounted diaphragm with O-ring (type series CE6100)

screw-in hole
(process side)



A	Ø B	Ø C	Ø D	E
G 1/2	19.4	21.3	18.2	20.5

welded socket
material stainless steel



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

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 .**
		· for process temperature up to + 140 °C (short term, for sterilization)	**CB602 .**
	flush mounted diaphragm	· for process temperature up to + 80 °C (standard)	**CE611 .**
		· for process temperature up to + 140 °C (short term, for sterilization)	**CE612 .**
Ex-protection	· without		**0**
	· Ex II 2 G Ex ib IIC T6 Gb		**1**

measuring range	meas. range	overload limit (bar)	**CB6000** connection G 1/2 B/ 1/2 NPT	**CE6100** connection with 0-ring G 1/2 B	**CE6100** connection DIN 3852 G 1/2 A	sensor type	
	0...1 bar	3	x	x	-	piezoresistiv	**A1053**
	0...1.6 bar	10	x	x	x	piezoresistiv	**A1054**
	0...2.5 bar	10	x	x	x	piezoresistiv	**A1055**
	0...4 bar	20	x	x	x	piezoresistiv	**A1056**
	0...6 bar	60	x	x	x	piezoresistiv	**A1057**
	0...10 bar	60	x	x	x	piezoresistiv	**A1058**
	0...16 bar	60	x	x	x	piezoresistiv	**A1059**
	0...25 bar	60	x	x	x	piezoresistiv	**A1060**
	0...40 bar	100	x	x	x	piezoresistiv	**A1061**
	0...60 bar	200	x	x	x	piezoresistiv	**A1062**
	0...100 bar	200	x	-	x	piezoresistiv	**A1063**
	0...160 bar	250	x	-	x	piezoresistiv	**A1064**
	0...250 bar	600	x	-	x	thin film	**A3065**
	0...400 bar	600	x	-	x	thin film	**A3066**
	-1...0 bar [2]	3	x	x	-	piezoresistiv	**A1086**
	-1...0.6 bar [2]	10	x	x	x	piezoresistiv	**A1087**
	-1...1,5 bar [2]	10	x	x	x	piezoresistiv	**A1088**
	-1...3 bar [2]	20	x	x	x	piezoresistiv	**A1089**
	-1...5 bar [2]	20	x	x	x	piezoresistiv	**A1090**
	-1...9 bar [2]	60	x	x	x	piezoresistiv	**A1091**
	-1...15 bar [2]	60	x	x	x	piezoresistiv	**A1092**
	0...1 bar abs	3	x	x	-	piezoresistiv	**B1053**
	0...1.6 bar abs	10	x	x	x	piezoresistiv	**B1054**
	0...2.5 bar abs	10	x	x	x	piezoresistiv	**B1055**
	0...4 bar abs	10	x	x	x	piezoresistiv	**B1056**
	0...6 bar abs	60	x	x	x	piezoresistiv	**B1057**
	0...10 bar abs	60	x	x	x	piezoresistiv	**B1058**
	0...16 bar abs	60	x	x	x	piezoresistiv	**B1059**
	0...25 bar abs	60	x	x	x	piezoresistiv	**B1060**

output signal	· 4...20 mA, 2-wire technology			**H1**
process connection material st. steel	sensor type piezoresistiv	type series CB6000	· G 1/2 B, inline diaphragm seal	**K1010**
			· 1/2"NPT, inline diaphragm seal	**K1030**
		type series CE6100	· G 1/2 B, flush-mounted diaphragm with O-ring (NBR)	**K1010**
	sensor type thin film	type series CE6100	· G 1/2 B, inline diaphragm seal	**K1010**
			· 1/2"NPT, inline diaphragm seal	**K1020**
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, model 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 [1]			**T120**

additional features (to be indicated in case of need, only):	
functional safety per EN 61508, classification per SIL 2	**W2602**
approval German Lloyd	**W2652**

Order code (example):						
	CB6010	A1057	H1	K1010	T410	

accessories

· welded socket of stainless steel G 1/2"	**MC1000-A1**

x = available

[1] connectors with cable connection see product group D6

[2] 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.

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