

Pressure transmitter UNIVERSAL

Thin film DMS

Type series CB103 ./CB203 .



Application area

- Chemical and petrochemical industry
- Machinery construction
- General process technology

Technical Data

Housing designs

Standard housing with right angle plug

material: st. steel mat.-no. 1.4301 (304)
degree of protection: IP 65
silicon cover plate for trimming potentiometers.
Right angle plug as per DIN EN 175301-803-A
(DIN 43650, form A) with cable gland M16x1.5
mm, cable diameter 4...10 mm.

Field housing, solid design

material: st. steel mat.-no. 1.4301 (304)
degree of protection: IP 67.
Screwable cover ring with O-ring seal for the ex-
ternally accessible trimming poten-tiometers.
Screwable case cap for connection chamber.
Connection terminals 4 mm².
Cable gland M16x1.5 for cable diameter
4.5...10 mm, material polyamide.

Process connection

G 1/2 B

Measuring system

measuring bridge embedded in thin film on a
stainless steel diaphragm

Material

diaphragm: st. steel mat.-no. 1.4542 (630)
socket: st. steel mat.-no. 1.4404 (316L)

Weights

Standard housing: approx. 300 g
Field housing: approx. 750 g

Storage temperature range

-25...+80 °C

Limiting temperature range

-25...+70 °C

Rated temperature range

-10...+70 °C

Temperature influence

on zero point: ≤ 0.03 % of meas. span /K
on meas. span: ≤ 0.03 % of meas. span /K

Auxiliary power supply

standard version:
· nominal voltage 24 V DC
· function range
2-wire circuitry 14...30 V DC
3-wire circuitry 16...30 V DC
· max.permiss.operating voltage 30 V DC
Ex design:
· permiss. voltage range of 2-wire circuitry
15...30 V DC
Ex design:
· permiss. voltage range of 3-wire circuitry
16...30 V DC

Standard measuring ranges

see order details

Overload limits UE

for short-time overload.
See order details

Overload influence

≤ 0.1 % f.s.

Output signal

4...20 mA, 2-wire circuitry, standard.
Further possibilities see order details

Features

- Measuring ranges 0...40 bar up to 0...600 bar rel.
- Thin film sensor element
- Zero point and measuring span can be adjusted externally by means of a potentiometer
- Stainless steel housing as standard or field housing
- Degree of protection IP 65, IP 67 (option)
- Wetted parts of stainless steel, completely welded
- Output signal: 4...20 mA, option: 0...20 mA, 0...10 V DC

Options

- Explosion protection
- As per UKCA regulations

Application

The integrated pressure system does not contain any li-
quids and is therefore suitable for dry measurements, e.g.
for oxygen. The area of application lies in general process
measurement technology. There are two different designs of
 housings available: standard housing with right angle plug or
 stainless steel field housing for use in tough environments.

Test output (with field housing only)

non interruptible output current measurement
via integrated LOC diode

Current limitation in output signal

max. output current approx. 30 mA

Supply voltage influence

≤ 0.2 % f.s. / 10 V

Linearity error incl. hysteresis

≤ 0.3 % f.s. (limit point calibration)

Adjustable range

zero point and measuring span approx.
± 10 %

Response time

≤ 20 ms

EC-Type Examination Certificate

TÜV 02 ATEX 1971 X and
IECEx TUN 04.0008X
type of ex-protection:
Ex II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb
Ex II 2G Ex ia IIC T4/T5/T6 Gb

IECEx TUN 04.0008X

type of ex-protection:
Ex ia IIC T4/T5/T6 Ga/Gb
Ex ia IIC T4/T5/T6 Gb
Ex ia I Ma

Since the intrinsically safe circuits are
connected with the earth potential for safety
reasons, potential equalization has to exist
in the complete course of the erection of the
intrinsically safe circuits.

Ambient temperatures

II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb
Ex ia IIC T4/T5/T6 Ga/Gb

Ta [°C]	TM [°C]	temperature class
70	40	T6
70	60	T5
70	60	T4

Ambient temperatures

II 2G Ex ia IIC T4/T5/T6 Gb
Ex ia IIC T4/T5/T6 Gb

Ta [°C]	TM [°C]	temperature class
70	55	T6
70	70	T5
70	70	T4

Ambient temperatures Ex ia I Ma:
Ta = Tm 70°C max

Electrical data

Sum of maximum values in the intrinsically safe circuits

Ui = 30 V
Ii = 100 mA
Pi = 0,7 W

The table shows the values for different pressure transmitter signals:

signal mode	Ci [nF]	Li [µH]
2-wire 4...20 mA	33	20
3-wire 0(2)...10 V	43	30
3-wire (0)4...20 mA	43	30

Caution:

Make sure that there is equipotential bonding along the entire wiring run both inside and outside the explosion hazardous area.

Switch off device if it is installed in zone 0 and in temperature class T5 and T6 and it fails!

Burden

- current output
2-wire circuitry
standard version $R_a = \frac{U_b - 14 V}{20 mA}$ (KOhm)
- with explosion protection $R_a = \frac{U_b - 15 V}{20 mA}$ (KOhm)
- voltage output
a current of 20 mA can be obtained in the case of devices with power output.

Burden influence

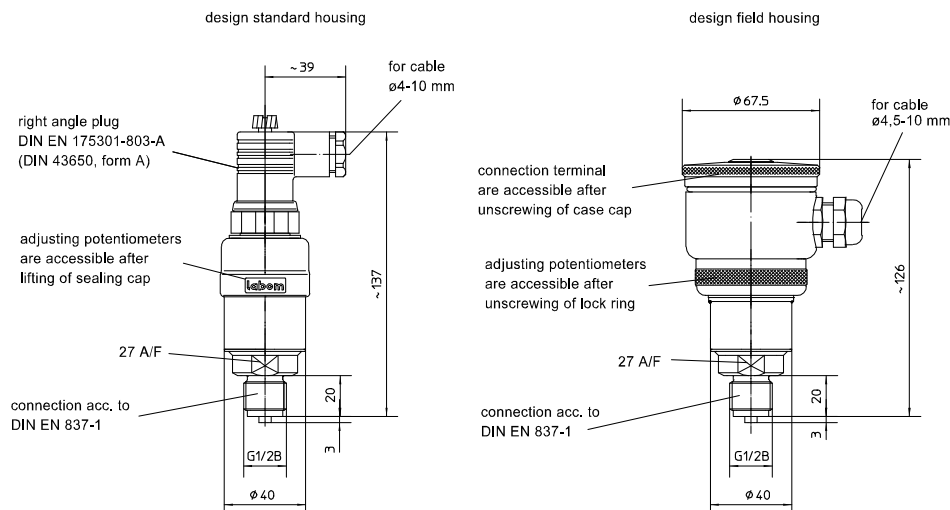
for 500 Ohm burden of change: ≤ 0.1 % f.s.

EMC-Test

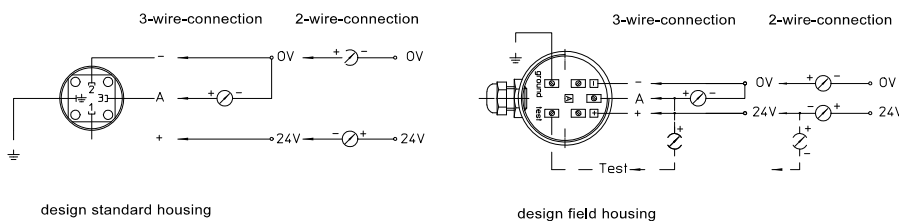
- noise immunity as per EN 50082, section 2, March 95 issue for industry
- emitted interference as per EN 50081, section 1, 1993 issue for residential and industrial areas

Information on other models see order details or upon request.

Dimensions



Connection diagram



Order details

Pressure transmitter UNIVERSAL thin film DMS			
design	· standard housing	CB103	
	· field housing	CB203	
version	· standard	0	
	· explosion protection, type of ex-protection s. below	1	
measuring range	· nach Tabelle	 ←
output signal	· 4...20 mA, 2-wire		H1
	· 0...20 mA, 3-wire		H2
	· 0...10 V, 3-wire		H4
	· 0...5 V, 3-wire		H6
additional features (to be indicated in case of need, only)			
type of ex-protection (for ex-protection only)	· II 2G Ex ia IIC T4 Gb		S69
	· II 2G Ex ia IIC T4/T5/T6 Gb, standard		S68
	· II 1/2G Ex ia IIC T4 Ga/Gb		S62
	· II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb		S66
	IECEX	· Ex ia IIC T4/T5/T6 Ga/Gb · Ex ia IIC T4/T5/T6 Gb · Ex ia I Ma	
as per UKCA regulations			W2660
Order code (example):		CB1030	A1061 H4

standard measuring range		
measuring range	UE ¹	order-code
0...40 bar	80 bar	A1061
0...60 bar	200 bar	A1062
0...100 bar	200 bar	A1063
0...160 bar	500 bar	A1064
0...250 bar	500 bar	A1065
0...400 bar	800 bar	A1066
0...600 bar	1000 bar	A1068

¹ special overload protection (UE) upon request