

Pressure transmitter UNIVERSAL

for general application

Type series CB1(2)02.



Application area

- Chemical and petrochemical industry
- General process engineering
- Shipping
- General process technology

Features

- Measuring ranges
 - 0...160 mbar up to 0...160 bar rel.
 - 0...0.4 bar up to 0...25 bar abs.
- Piezoresistive sensor element
- Measuring system overload protected
- Zero point and measuring span can be adjusted externally by means of a potentiometer
- Internal diaphragm
- Wetted parts of stainless steel, completely welded
- Stainless steel housing as standard or field housing
- Degree of protection IP 65, option: IP 67
- Output signal: 4...20 mA, option: 0...20 mA, 0...10 V DC

Options

- Approvals / Certificates
 - Explosion protection for gases
 - DNV approval
- As per UKCA regulations

Application

The analog pressure transmitter UNIVERSAL is suited for measuring the relative and absolute pressure of gases, vapors and liquids.

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.

Technical data

Constructional design / case

Design:	<u>Standard housing with right angle plug</u> Silicon cover plate for trimming potentiometers	
Material:	Stainless steel mat.-no. 1.4301 (304)	
Degree of protection:	IP 65 per EN 60529	
Pressure compensation:	Inner chamber aeration for measuring ranges ≤ 10 bar	
Electrical connection:	Right angle plug EN 175301-803-A with cable gland M16x1.5 mm, for cable $\varnothing 4 \dots 10$ mm	
Design:	<u>Field housing, solid design</u> Screwable cover ring with O-ring seal for the externally accessible trimming potentiometers Screwable case cap for connection chamber with O-ring thread protection	
Material:	Stainless steel mat.-no. 1.4301 (304)	
Degree of protection:	IP 65 per EN 60529 Inner chamber aeration via integrated sintered filter, only for excess pressure measuring ranges ≤ 10 bar, if aeration via cable is impossible	
Degree of protection:	Option: IP 67 per EN 60529 Inner chamber aeration via connection cable for excess pressure measuring range ≤ 10 bar	
Electrical connection:	Cable gland M16 x 1.5 for cable diameter 4.5...10 mm Material: polyamide Connection terminals 4 mm ²	
Weights:	Standard housing	approx. 300 g
	Field housing	approx. 750 g

Process connection

Design:	G 1/2 B per EN 837-1
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Material wetted parts

Socket:	Stainless steel mat.-no. 1.4404 (316L)
Diaphragm:	Stainless steel mat.-no. 1.4404 (316L)

Measuring system

Sensor:	Piezoresistive measuring bridge, protected by integrated stainless steel diaphragm, completely welded system
System filling:	Silicone-free, synthetic oil

Accuracy

Lin./hyst.:	≤ 0.3 % f.s. (limit point setting)
Adjustable range:	Zero point and measuring span approx. ± 10 %
Temperature influence:	On zero point and measuring span: $\leq 0,2$ % / 10 K
Overload limit:	For short-time overload Values see order details
Overload influence:	≤ 0.1 % f.s..

For information on definitions of terms regarding the Pressure Equipment Directive, see Technical Instruction TA_068.

Output

Signal:	4...20 mA, 2-wire technology Further possibilities see order details
Test output: (only for field housing)	Non interruptible output current measurement via integrated LOC diode
Response time:	≤ 20 ms
Current limitation:	≤ 30 mA
Burden, R:	<u>Current output (2-wire)</u> standard: $R \leq (U-14V)/0.02 \text{ A } [\Omega]$ with explosion protection: $R \leq (U-15V)/0.02 \text{ A } [\Omega]$ U = supply voltage <u>Voltage output</u> A current of 20 mA can be obtained in the case of devices with current output.
Burden influence:	For 500 Ω burden of change: $\leq 0,1$ % v.E.

Supply voltage

Standard version:

Nominal voltage	24 V DC
Function range:	2-wire technology: 14...30 V DC 3-wire technology: 16...30 V DC
Max. permissible operating voltage:	30 V DC

Ex-design

Function range:	2-wire technology: 15...30 V DC 3-wire technology: 16...30 V DC
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Influence of supply voltage: ≤ 0.2 % f.s. / 10V

Temperature ranges

Storage temperature:	-25...80 °C
Rated temperature:	-10...70 °C
Limit temperature:	-25...70 °C

Tests and certificates

Ex approval

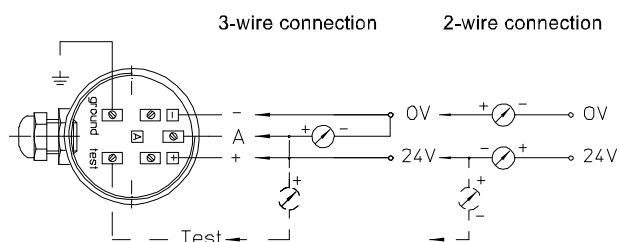
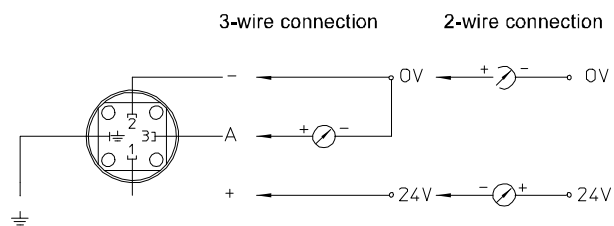
ATEX:	TÜV 02 ATEX 1971 X ⚡ II 2 G Ex ia IIC T4/T5/T6 Gb ⚡ II 1/2 G Ex ia IIC T4/T5/T6 Ga/Gb
IECEX:	IECEX TUN 04.0008X Ex ia IIC T4/T5/T6 Gb Ex ia IIC T4/T5/T6 Ga/Gb Ex ia I Ma

For further details to ambient temperatures, electrical data and special conditions see Ex Instruction XA_007.

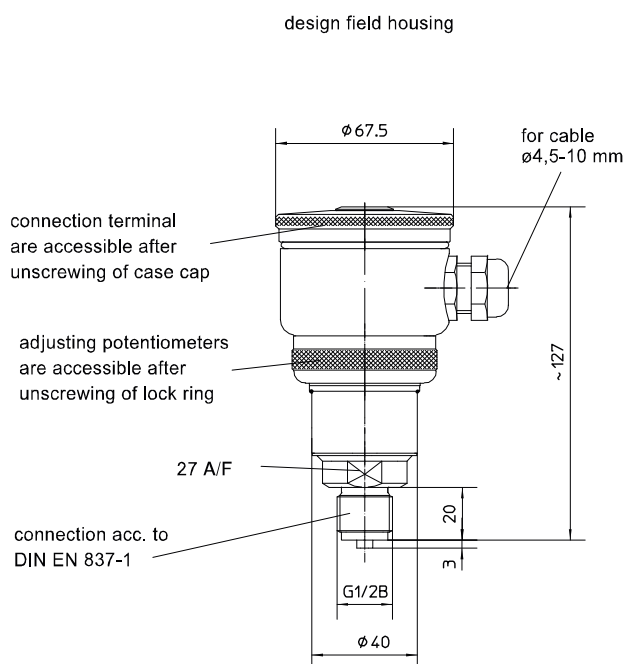
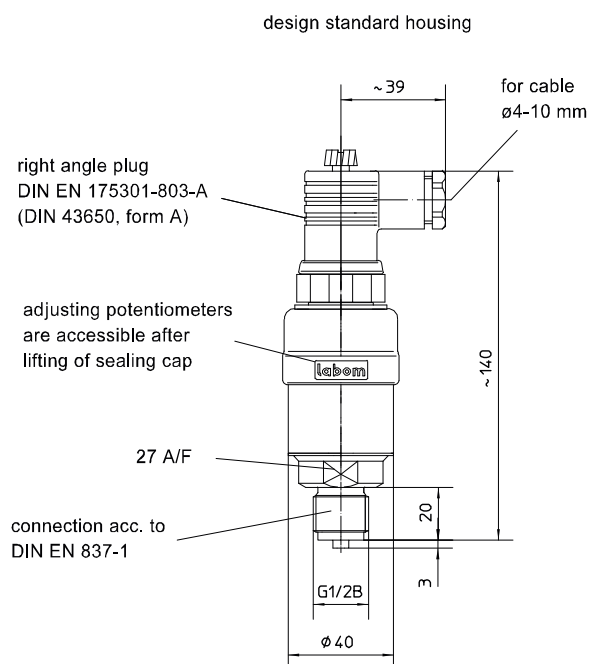
DNV approval:	Per certificate-no.: TAA00002MV
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EMC:	■ Noise immunity as per EN 50082, section 2, March 95 issue for industry. ■ Emitted interference as per EN 50081, section 1, 1993 issue for residential and industrial areas. The device has no own emission.
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Connection diagram



Dimensions



Order details

Pressure transmitter UNIVERSAL for general application			
CB102 .	design	standard housing	
CB202 .		field housing	
0	Ex-protection	without	
1		type of Ex-protection s. below	
	standard measuring ranges	measuring range	overload limit ¹
A1087		-1...0.6 bar ²	10 bar
A1088		-1...1.5 bar ²	10 bar
A1089		-1...3 bar ²	20 bar
A1090		-1...5 bar ²	20 bar
A1091		-1...9 bar ²	60 bar
A1092		-1...15 bar ²	60 bar
A1009		0...160 mbar	1 bar
A1010		0...250 mbar	1 bar
A1051		0...0.4 bar	3 bar
A1052		0...0.6 bar	3 bar
A1053		0...1 bar	3 bar
A1080		0,2...1 bar	3 bar
A1054		0...1.6 bar	10 bar
A1055		0...2.5 bar	10 bar
A1056		0...4 bar	20 bar
A1057		0...6 bar	60 bar
A1058		0...10 bar	60 bar
A1059		0...16 bar	60 bar
A1060		0...25 bar	60 bar
A1061		0...40 bar	100 bar
A1062		0...60 bar	200 bar
A1063		0...100 bar	200 bar
A1064		0...160 bar	250 bar
B1051		0...0.4 bar abs	3 bar
B1052		0...0.6 bar abs	3 bar
B1053		0...1 bar abs	3 bar
B1054		0...1.6 bar abs	10 bar
B1055		0...2.5 bar abs	10 bar
B1056		0...4 bar abs	10 bar
B1057		0...6 bar abs	60 bar
B1058		0...10 bar abs	60 bar
B1059		0...16 bar abs	60 bar
B1060		0...25 bar abs	60 bar
H1	output signal	4...20 mA, 2-wire technology	
H2		0...20 mA, 3-wire technology	
H4		0...10 V, 3-wire technology	
H6		0...5 V, 3-wire technology	

Additional features (to be indicated in case of need, only):			
T2	degree of protection ³	IP65 (Standard) ⁴	
T1		IP67 ⁵	
S68	type of ex-protection	ATEX	⚡ II 2G Ex ia IIC T5/T6 Gb
S66			⚡ II 1/2G Ex ia IIC T5/T6 Ga/Gb
S76		IECEX	Ex ia IIC T4/T5/T6 Ga/Gb
			Ex ia IIC T4/T5/T6 Gb
			Ex ia I Ma
W2652	DNV approval		
W2660	as per UKCA regulations		

Order code (example): CB1020 - A1057 - H2 - ...

¹ Special overload protection (UE) upon request.

² Negative relative pressure ranges (e.g. -1...+1 bar) are adjusted at works to 0...100%, e.g. 4...20mA. Temporary operation up to -1 bar at room temperature and continuous operation up to -500 mbar at max. 50°C is admissible. 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.

³ Design field housing only.

⁴ Not valid for absolute pressure.

⁵ Aerated cable with < 10 bar is required.