labom

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 GL 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

Constructional	uesign / case		
Design:	Standard housing with right angle plug		
	Silicon cover plate for trimming potenti- ometers		
Material:	Stainless steel matno. 1.4301 (304)		
Degree of pro- tection:	IP 65 per EN 60529		
Pressure compensa- tion:	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 Ø 4…10 mm		
Design:	Field housing, solid design		
	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 matno. 1.4301 (304)		
Degree of pro- tection:	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		
	Option:		
Degree of pro- tection:	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 diame- ter 4.510 mm Material: polyamide Connection terminals 4 mm ²		
Weights:	Standard housing approx. 300 g		
	Field housing approx. 750 g		
Process connect	ction		
Design:	G 1/2 B per EN 837-1		
Material wetted	parts		
Socket:	Stainless steel matno. 1.4404 (316L)		

Diaphragm:	Stainless steel matno.	1.4404	(316L)
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Measuring system

Sensor:	Piezoresistive measuring bridge, pro- tected by integrated stainless steel dia- phragm, completely welded system
System filling:	Silicone-free, synthetic oil

Accuracy Lin./hyst.: ≤ 0.3 % f.s. (limit point setting) Adjustable Zero point and measuring span approx. range: ± 10 % On zero point and measuring span: Temperature influence: $\leq 0,2 \% / 10 \text{ K}$ Overload limit: For short-time overload Values see order details Overload ≤ 0.1 % f.s.. influence: Output Signal: 4...20 mA, 2-wire technology Further possibilities see order details Non interruptible output current meas-Test output: (only for field urement via integrated LOC diode housing) Response ≤ 20 ms time: Current ≤ 30 mA limitation: Burden, R: Current output (2-wire) standard: $R \le (U-14V)/0.02 A [\Omega]$ with explosion protection: R ≤ (U-15V)/0.02 A [Ω] U = supply voltage Voltage output A current of 20 mA can be obtained in the case of devices with current output. Burden For 500 Ω burden of change: influence: ≤ 0,1 % v.E.

Supply voltage

Standard versior	<u>):</u>		
Nominal voltage	24 V DC		
Function range:	2-wire technology: 1430 V DC 3-wire technology: 1630 V DC		
Max. permissible operating voltage: 30 V DC			
<u>Ex-design</u>			
Function range:	2-wire technology: 1530 V DC 3-wire technology: 1630 V DC		
Influence of supply voltage: $\leq 0.2 \%$ f.s. / 10V			

Temperature ranges

Storage	-25.	80 °C
temperature:		
Datad	40	70 00

Rated -10...70 °C temperature:

Limit -25...70 °C temperature:

Tests and certificates

Ex approval

ATEA.	100 02 ATEX 1971 X
	🔄 II 2G Ex ia IIC T4 Gb
	🖾 II 1/2G Ex ia IIC T4 Ga/Gb
IECEx:	IECEx TUN 04.0008X
	Ex ia IIC T4 Ga/Gb
	Ex ia IIC T4 Gb
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For further details to ambient temperatures, electrical data and special conditions see Ex Instruction XA_007.

DNV GL approval:	Per certificate-no.: TAA00002MV
EMC:	 Noise immunity as per EN 50082, section 2, March 95 issue for indus-

try.
Emitted interference as per EN 50081, section 1, 1993 issue for residential and industrial areas.

The device has no own emission.

Connection diagram



standard housing

field housing

Dimensions



Order details

Pressure transmitter UNIVERSAL for general application				
CB102.	design standard housing			
CB202 .	design	field housing		
0	Ex protection	without		
1	Ex-protection	type of Ex-protection s. below		
		measuring range	overload limit ¹	
A1087		-10.6 bar ²	10 bar	
A1088		-11.5 bar ²	10 bar	
A1089		-13 bar ²	20 bar	
A1090		-15 bar ²	20 bar	
A1091		-19 bar ²	60 bar	
A1092		-115 bar ²	60 bar	
A1009		0160 mbar	1 bar	
A1010		0250 mbar	1 bar	
A1051		00.4 bar	3 bar	
A1052		00.6 bar	3 bar	
A1053		01 bar	3 bar	
A1080		0,21 bar	3 bar	
A1054		01.6 bar	10 bar	
A1055		02.5 bar	10 bar	
A1056		04 bar	20 bar	
A1057	standard massiving ranges	06 bar	60 bar	
A1058	standard measuring ranges	010 bar	60 bar	
A1059		016 bar	60 bar	
A1060		025 bar	60 bar	
A1061		040 bar	100 bar	
A1062		060 bar	200 bar	
A1063		0100 bar	200 bar	
A1064		0160 bar	250 bar	
B1051		00.4 bar abs	3 bar	
B1052		00.6 bar abs	3 bar	
B1053		01 bar abs	3 bar	
B1054		01.6 bar abs	10 bar	
B1055		02.5 bar abs	10 bar	
B1056		04 bar abs	10 bar	
B1057		06 bar abs	60 bar	
B1058		010 bar abs	60 bar	
B1059		016 bar abs	60 bar	
B1060		025 bar abs	60 bar	
H1		420 mA, 2-wire technology		
H2		020 mA, 3-wire technology		
H4	output signal	010 V, 3-wire technology		
H6		05 V, 3-wire technology		

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

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

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

¹ special overload protection (UE) upon request