

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



Application area

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

Technical data

Constructional design / case

Design:	■ Field housing IP 65 or IP 67, with cable gland ■ Right-angle plug per EN 175301-803-A (DIN 43650, model A), IP 65 ■ Cable connection IP 67 ■ Circular connector M12, IP 65						
Construction:	Electronics unit encapsulated with silicone						
Material:	Stainless steel mat.-no. 1.4301 (304)						
Pressure compensation:	Inner chamber aeration for measuring ranges < 16 bar over case thread or connection cable (depending on design)						
Weights:	<table> <tr> <td>Case with connector</td><td>approx. 200 g</td></tr> <tr> <td>field housing</td><td>+ approx. 260 g</td></tr> <tr> <td>with temperature decoupler</td><td>+ approx. 50 g</td></tr> </table>	Case with connector	approx. 200 g	field housing	+ approx. 260 g	with temperature decoupler	+ approx. 50 g
Case with connector	approx. 200 g						
field housing	+ approx. 260 g						
with temperature decoupler	+ approx. 50 g						

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 case as standard or field housing
- Degree of protection IP 65, alternatively IP 67
- Output signal: 4...20 mA
- Process temperature up to 140 °C (short term, for sterilisation)

Options

- Approvals/Certificates
 - Explosion protection for gases
 - Certificate of measuring equipment for Russian Federation
 - Classification per SIL2
 - GL-approval

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.

Process connection

Design: See order details

Material wetted parts

Sensor :	piezoresistive	thin film
Sensor diaphragm:	1.4404/1.4435 (316L)	1.4542 (630)
Socket:	1.4404/1.4435 (316L)	1.4301/1.4404 (304/316L)
Diaphragm:	Stainless steel mat.-no. 1.4404 (316L)	
Socket:	Stainless steel mat.-no. 1.4404 (316L)	

Measuring system

Sensor:	Piezoresistive	Thin film
Sensor filling:	Synthetic oil, free of silicone FD1, FDA listed	without

Accuracy

Lin./Hyst.:	< 0.2 % f.s. < 0.3 % f.s. for $m_r \geq 0 \dots 60$ bar Fixed point adjustment
Adjustment:	< ± 0.2 % f.s.
Temperature effect:	At $0 \dots 50$ °C: Zero point ≤ 0.2 % / 10K Span ≤ 0.2 % / 10K

Output

Signal:	4...20 mA, 2-wire technology
Adjusting range	approx. ± 5 % f.s., zero point and measuring span separately adjustable
Delay:	≤ 20 ms
Current limitation:	≤ 30 mA
Load, R_B :	$R_B \leq (U_V - 6V)/0.02A$ [KOhm] U_V = supply voltage
Load influence:	for load change 500 Ohm: ≤ 0.1 % f.s.

Supply voltage

standard design:

Nominal voltage:	24 V DC
Functional range:	6...30 V DC
max. allowable:	30 V DC
Influence:	≤ 0.01 % v.E. /V

Temperature ranges

Ambient:	-25...70 °C
Media:	-10...80 °C with temperature decoupler (short term, for sterilization): -10...140 °C
Storage:	-40...90 °C

Further temperature ranges upon request.

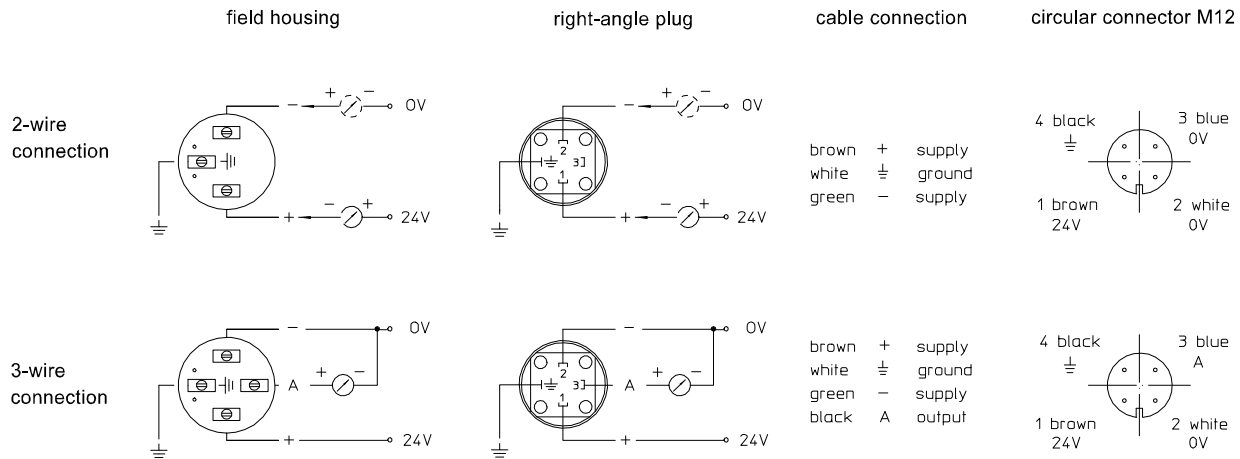
Tests and certificates

Ex approval:	CENELEC approval according to ATEX Explosion protection intrinsically safe TÜV 00 ATEX 1557 X Ⓔ II 2G Ex ib IIC T6 Gb $U_{max} \leq 30$ V DC $I_{max} \leq 150$ mA $P_{max} \leq 1$ W $C_i \leq 49$ nF $L_i \leq 33$ µH
SIL 2:	Functional safety per EN 61508, classification per SIL2 TÜV-Reg.-No. 44 799 13190204
GL approval:	Per certificate no. 60208-09 HH
■	EAC declaration upon request
■	Certificate of measuring equipment for Russian Federation

EMC test

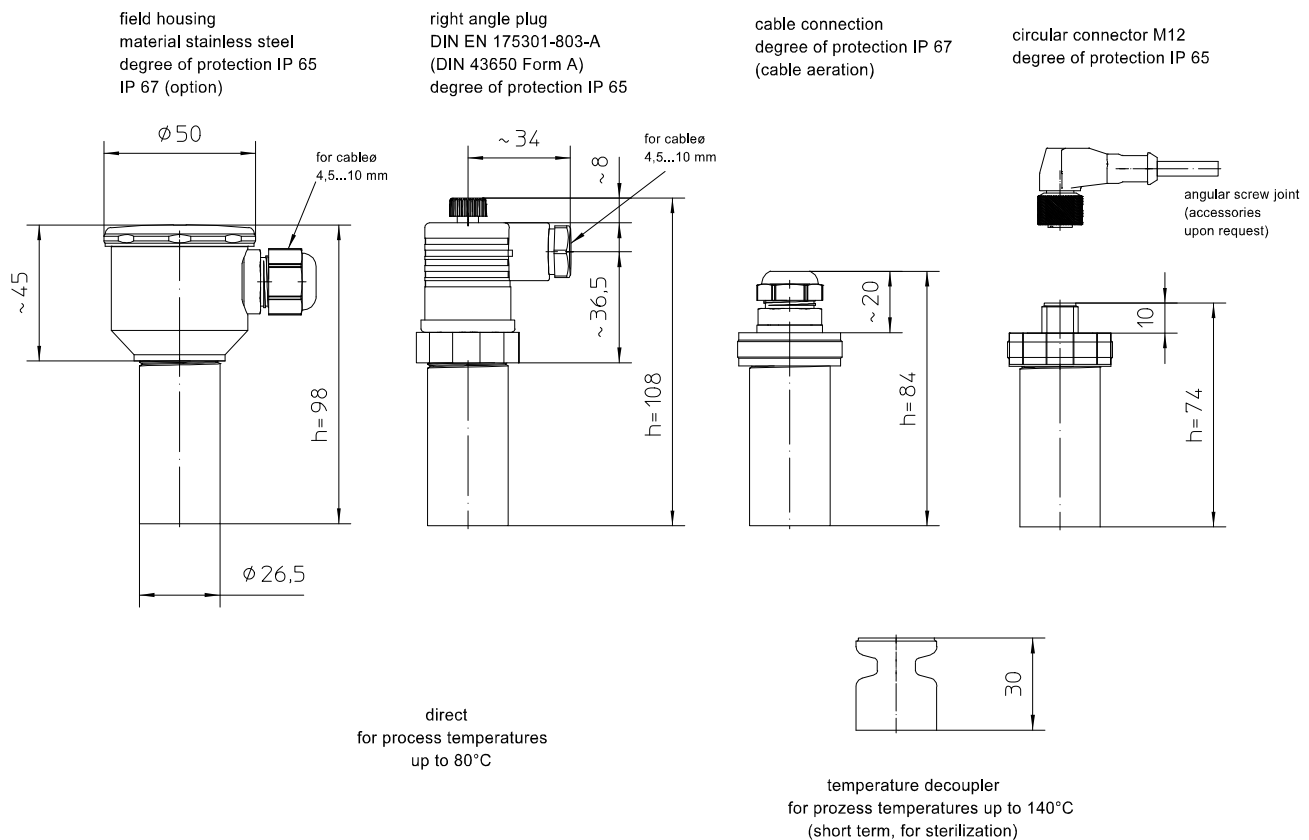
EMC:	■ Noise immunity as per EN 50082, section 2, March 95 issue for industry. ■ Emitted interference as per EN 50081, section 1, 1993 issue for residential and industrial areas. The device has no own emission.
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Connection diagram



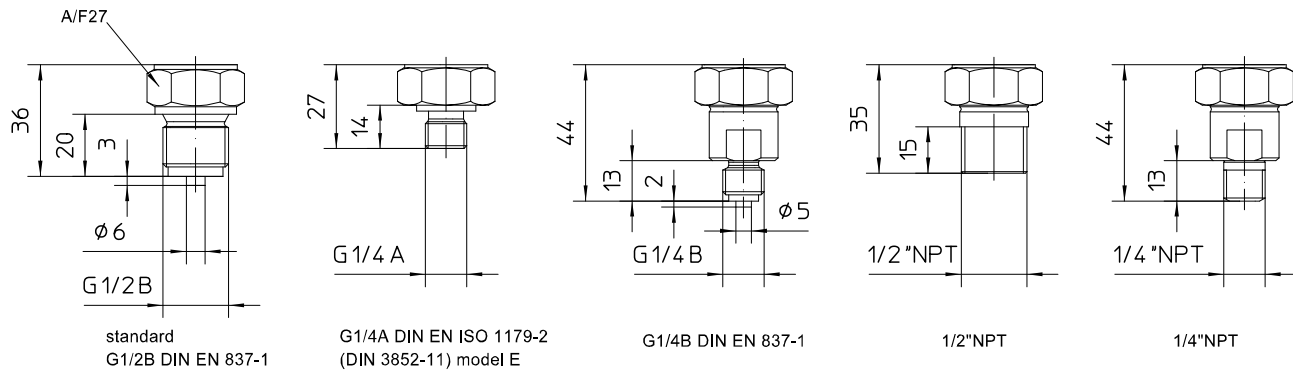
Dimensions

Case



All dimensions are in mm

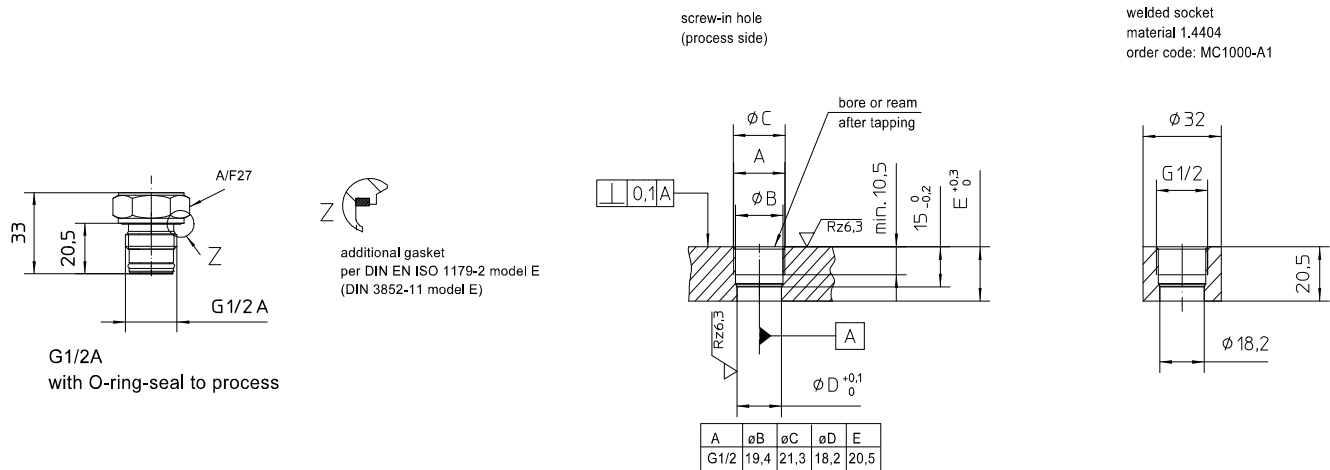
Process connections piezoresistive, internal diaphragm



All dimensions are in mm

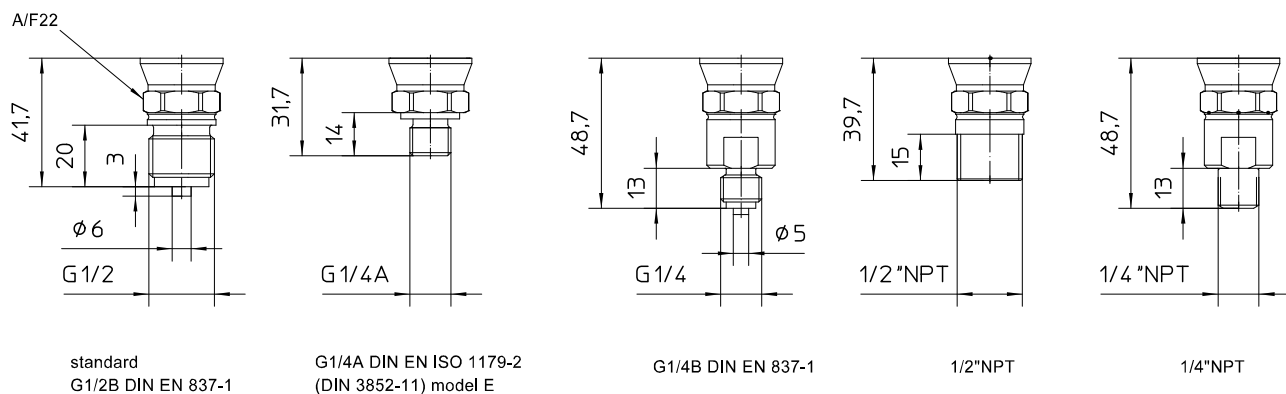
Process connection piezoresistive, flush mounted diaphragm

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



All dimensions are in mm

Process connection thin film, internal diaphragm



All dimensions are in mm

Order details

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

Order details CB60../CE61..							
CB601 .	design	internal diaphragm	for media temperature up to 80 °C				
CB602 .			for media temperature up to 140 °C				
CE611 .		flush mounted diaphragm	for media temperature up to 80 °C				
CE612 .			for media temperature up to 140 °C				
0	Ex-protection	without					
1		Ⓔ II 2 G Ex ib IIC T6 Gb					
	measuring range	measuring range	overload limit	CB600 connection	CE6100 connection with O-ring	sensor type	
A1053		0..1 bar	3 bar	x	x	piezoresistive	
A1054		0...1.6 bar	10 bar	x	x		
A1055		0...2.5 bar	10 bar	x	x		
A1056		0...4 bar	20 bar	x	x		
A1057		0...6 bar	60 bar	x	x		
A1058		0...10 bar	60 bar	x	x		
A1059		0...16 bar	60 bar	x	x		
A1060		0...25 bar	60 bar	x	x		
A1061		0... 40 bar	100 bar	x	x		
A1062		0...60 bar	200 bar	x	x		
A1063		0...100 bar	200 bar	x	-		
A1064		0...160 bar	250 bar	x	-		
A3065		0...250 bar	600 bar	x	-		thin film
A3066		0...400 bar	600 bar	x	-		
A1086		-1...0 bar ¹	3 bar	x	x	piezoresistive	
A1087		-1...0.6 bar ¹	10 bar	x	x		
A1088		-1...1.5 bar ¹	10 bar	x	x		
A1089		-1...3 bar ¹	20 bar	x	x		
A1090		-1...5 bar ¹	20 bar	x	x		
A1091		-1...9 bar ¹	60 bar	x	x		
A1092		-1...15 bar ¹	60 bar	x	x		
B1053		0...1 bar abs	3 bar	x	x		
B1054		0...1.6 bar abs	10 bar	x	x		
B1055		0...2.5 bar abs	10 bar	x	x		
B1056		0...4 bar abs	10 bar	x	x		
B1057		0...6 bar abs	60 bar	x	x		
B1058		0...10 bar abs	60 bar	x	x		
B1059		0...16 bar abs	60 bar	x	x		
B1060		0...25 bar abs	60 bar	x	x		
H1	output signal	4...20 mA, 2-wire technology					
K1002	process connection material stainless steel	internal diaphragm (type series CB60..)	G1/4 B per EN 837-1				
K1010			G1/2 B per EN 837-1				
K1024			G1/4 A per DIN EN ISO 1179-2 (DIN 3852-11) model E				
K1030			1/2" NPT				
K1072			1/4" NPT				
K1010		flush mounted diaphragm (type series CE61..)	G1/2 A with O-ring				
T410	case electrical connection	field housing of stainless steel, with cable gland	IP 65, measuring ranges ≤ 16 bar, only ²				
T420			IP 67				
T110		right angle plug according to EN 175301-803-A (DIN 43650 model A), IP 65					
T310		cable connection IP 67	2 m cable lenght				
T311			5 m cable lenght				
T312			10 m cable lenght				
T319			cable length as in writing				
T120		circular connector M12, IP 65 ³					

Additional features (to be indicated if required)	
W2602	functional safety per EN 61508, classificatio per SIL2
W2652	approval German Lloyd
W2673	certificate of measuring equipment for Russian Federation

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

Order code (example): CB6011 – A1053 – H1 - K1010 - ...

¹ negative relative pressure ranges (e.g. -1...+1 bar) are adjusted at works to 0...100 %, e.g. 4...20 mA. Long term vacuum measurements at relative measuring ranges may cause changes in the properties of the measurement device. Vacuum-proof designs are available upon request.

² not valid for absolute pressure

³ connectors with cable connection see product group D6