Baumer
Passion for Sensors

Pressure sensor

PBMH autoclavable - Configurator

PBMH-2##############200#

Overview

- Fully autoclavable pressure sensor for common sterilization processes
- High temperature resistance for SIP and CIP processes
- Surface roughness of process connection Ra ≤ 0.8 for highest hygienic requirements
- Fully welded and compact design for washdowns without residuals
- Excellent active temperature compensation for increased process stability
- External programming of zero point and span with FlexProgrammer 9701



Picture similar

Technical data

Performance characteristics	
Pressure type	Absolute Relative (gauged)
Compensated temperature range	-10 … 85 °C
Long term stability	≤ 0.1 % FSR/a , measuring range > 1 bar ≤ 1 mbar , measuring range ≤ 1 bar
Max. measuring error	± 0.1 % FSR ± 0.25 % FSR Including zero-point and span error, non-linearity (by terminal base line), hysteresis and non-repeatability (EN 61298-2) For turndown, multiply this value by the applied turndown ratio
Max. measuring span	40 bar
Max. turndown ratio	5 : 1
Measuring range	-1 … 40 bar
Step response time	≤ 5 ms
Standard error of measurement (BFSL)	± 0.04 % FSR ± 0.1 % FSR Including non-linearity, hysteresis and non-repeatability according BFSL For turndown, multiply this value by the applied turndown ratio
Min. measuring span	0.4 bar
Temperature coefficient	≤ 0.03 % FSR/10 K , measuring span ≤ 0.03 % FSR/10 K , zero point
Process conditions	
Process temperature	-40 … 125 °C , without cooling neck -40 … 200 °C , with cooling neck
Process pressure	Refer to section "Operating conditions"

Process conditions	
SIP/CIP compatibility	< 60 min, without cooling neck @ medium temperature up to 150 °C Permanent, with cooling neck @ medium temperature up to 200 °C
Autoclavability	
Sterilisation conditions	Complete sensor with attached protective cover
Ambient pressure during sterilisation process	≤ 3500 mbar
Process duration	≤ 30 min
Sterilisation temperature	≤ 140 °C
Process connection	
Connection variants	Refer to section "Dimensional drawings"
Wetted parts material, process connection	AISI 316L (1.4435)
Wetted parts material, membrane	AISI 316L (1.4435)
Wetted parts material, gasket	EPDM, optional EPDM O-rings are conform to 3-A Sanitary Standard 18-03 Class II, EPDM gaskets are conform to 3-A Sanitary Standard 18-03 Class I (8% milk fat max.)
Surface roughness (in contact with medium)	
Membrane	Ra ≤ 0.4 µm
Process connection	Ra ≤ 0.4 µm
Weld joint	Ra ≤ 0.8 µm
Ambient conditions	
Operating temperature range	-10 … 85 °C
Storage temperature range	-10 … 85 °C
Degree of protection (EN 60529)	IP 67

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Technical data

Ambient conditions	
Bump (EN 60068-2-27)	100 g / 2 ms, 4000 impulses per axis and direction
Shock (EN 60068-2-27)	50 g / 11 ms, 100 g / 6 ms, 10 impulses per axis and direction
Vibration (sinusoidal) (EN 60068-2-6)	1.5 mm p-p (10 … 58 Hz), 10 g (58 Hz … 2 kHz), 10 cycles (2.5 h) per axis
Vibration, broad-band random (EN 60068-2-64)	0.1 g² / Hz, > 10 gRMS (20 Hz … 1 kHz), 30 min. per axis
Output signal	
Current output	4 … 20 mA , 2-wire 20 … 4 mA , 2-wire
Voltage output	0 … 10 V , 3-wire 0 … 5 V , 3-wire 0.5 … 4.5 V , 3-wire 1 … 5 V , 3-wire 10 … 0 V , 3-wire
Load resistance	> 5 kΩ, with voltage output R = (Vs - 8 V)/20 mA, with current output
Insulation resistance	> 100 MΩ , 500 V DC
Short circuit protection	Yes

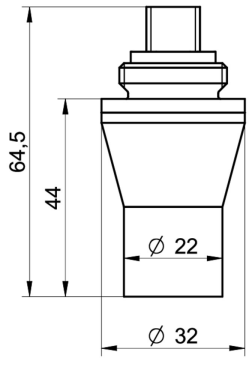
Output signal	
Shunt resistance	Rs ≤ (Vs - 8 V)/0.0205 A Rs ≤ 750 Ω, Vs = 24 V
Housing	
Style	Compact transmitter
Overall size	Refer to section "Dimensional drawings"
Material	AISI 316L (1.4404) including sterilization cap
Electrical connection	
Connector	Fischer, 4-pin, stainless steel M12-A, 4-pin, stainless steel
Power supply	
Voltage supply range	13 … 30 V DC , with voltage output 8 … 30 V DC , with current output
Compliance and approvals	
EMC	EN 61000-6-2 EN 61000-6-3
Hygiene	3-A (74-07) EHEDG EL Class I

Operating conditions

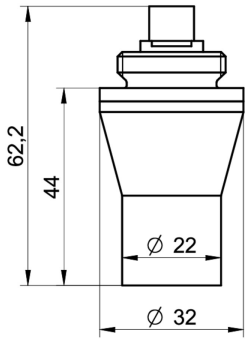
Measuring range (bar)							Proof pressure (bar)	Burst Pressure (bar)
	-1 … 0	-1 … 0,6	0 … 0,4	0 … 0,6	0 … 1		3	6
-1 … 1,5	-1 … 3	-1 … 5	0 … 1,6	0 … 2	0 … 2,5	0 … 4	15	30
	-1 … 9	-1 … 15	0 … 6	0 … 10	0 … 16	0 … 20	60	120
		-1 … 24	0 … 25				70	140
		-1 … 39	0 … 40				135	270

Dimensional drawings (mm)

Housing



Housing with connector M12-A, 4-pin, high temperature



Housing with connector Fischer, 4-pin, stainless steel

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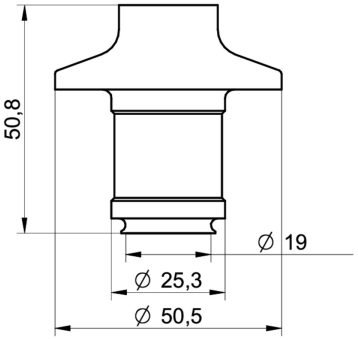
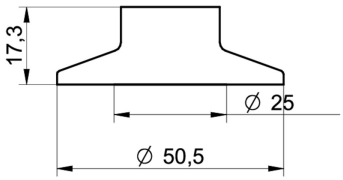
Dimensional drawings (mm)

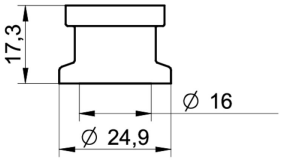
Process connection



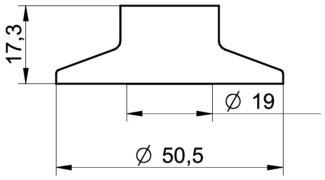
B01-50
BHC 3A DN 38, membrane Ø 19 mm (BCID: B01)



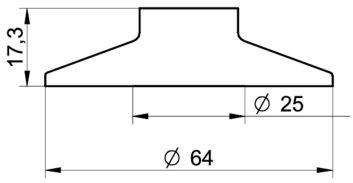
C04-51
Tri-Clamp Ø 50.5, membrane Ø 25 mm (BCID: C04)



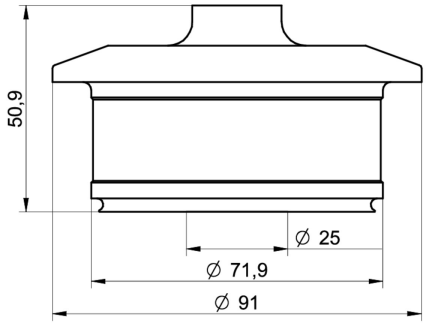
C01-52
Tri-Clamp Ø 24.9, membrane Ø 16 mm (BCID: C01)



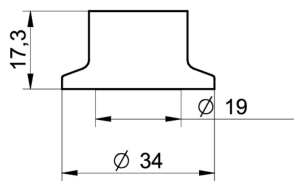
C03-53
Tri-Clamp Ø 50.5, membrane Ø 19 mm (BCID: C03)



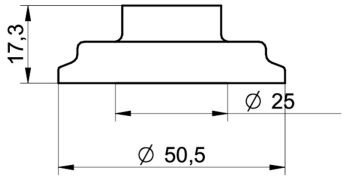
C05-54
Tri-Clamp Ø 64.0, membrane Ø 25 mm (BCID: C05)



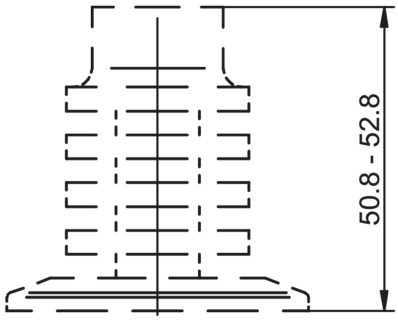
B02-56
BHC 3A DN 76, membrane Ø 25 mm (BCID: B02)



C02-57
Tri-Clamp Ø 34.0, membrane Ø 19 mm (BCID: C02)



H51-58
DIN 11864-3-A BKS (Aseptic Clamp), DN25, Ø 50.5, membrane Ø 25 mm (BCID: H41)



Cooling neck

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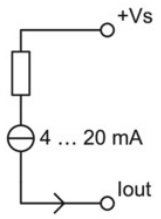
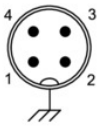
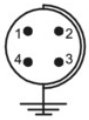
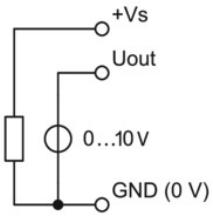
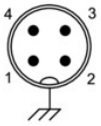
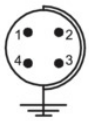
Electrical connection

Output signal	Equivalent circuit	Electrical connection	Function	Pin assignment
4 … 20 mA (2-wire)			+Vs	1
			Iout	3
			Frame Ground	Plug thread
			n.c.	2, 4
			+Vs	1
			Iout	2
			Frame Ground	Plug thread
			n.c.	3, 4
0 … 10 V (3-wire)			+Vs	1
			Uout	2, 4
			GND (0 V)	3
			Frame Ground	Plug thread
			+Vs	1
			Uout	2
			GND (0 V)	3
			Frame Ground	Plug thread
			n.c.	4

Ordering information

Ordering key - Configuration possibilities see website

	PBMH	-	2	#	###	#	##	##	##	#	#	2	0	0	#
Product															
	PBMH														
Housing material															
Stainless steel 1.4404 AISI 316L			2												
Accuracy															
±0.25 % FS				4											
±0.10 % FS				5											
Measuring range															
0 ... 0.4 bar (EN)					B11										
0...0,6 bar (EN)					B12										
0 ... 1 bar (EN)					B15										
0 ... 1,6 bar (EN)					B16										
0 ... 2 bar (EN)					B17										
0 ... 2.5 bar (EN)					B18										
0 ... 4 bar (EN)					B19										
0...12 bar (EN)					B1K										
-1 ... 39 bar (EN)(4)					B1L										
0 ... 6 bar (EN)					B20										
0 ... 10 bar (EN)					B22										
0 ... 16 bar (EN)					B24										
0 ... 20 bar (EN)					B25										
0 ... 25 bar (EN)(4)					B26										
0 ... 40 bar (EN)(4)					B27										
-0,1...0,1 bar (EN)					B2H										
-0,2...0,2 bar (EN)					B4G										
-0,6...0 bar (EN)					B58										
-1 ... 0 bar (EN)					B59										
-1 ... 0,6 bar (EN)					B72										

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Ordering information

Ordering key - Configuration possibilities see website

	PBMH	-	2	#	###	#	##	##	##	#	#	2	0	0	#
-1 ... 1 bar (EN)					B73										
-1 ... 1,5 bar (EN)					B74										
-1...2 bar (EN)					B75										
-1 ... 3 bar (EN)					B76										
-1 ... 5 bar (EN)					B77										
-1 ... 9 bar (EN)					B79										
-1 ... 15 bar (EN)					B81										
-1 ... 24 bar (EN)(4)					B82										
0...5 bar (EN)					B98										
0...6 psi (ANSI)					H11										
0...10 psi (ANSI)					H13										
0...15 psi (ANSI)					H15										
0...25 psi (ANSI)					H16										
0...30 psi (ANSI)					H17										
0...60 psi (ANSI)					H19										
0...20 psi (ANSI)					H1C										
0...500 psi (ANSI)(4)					H1E										
-30Hg...600 psi (ANSI)(4)					H1L										
0...100 psi (ANSI)					H21										
0...160 psi (ANSI)					H22										
0...200 psi (ANSI)					H23										
0...250 psi (ANSI)					H24										
0...300 psi (ANSI)(4)					H25										
0...400 psi (ANSI)(4)					H26										
0...600 psi (ANSI)(4)					H27										
-30HG...60 psi (ANSI)					H2C										
-30HG...0 (ANSI)					H59										
-30HG...15 psi (ANSI)					H73										
-30HG...30 psi (ANSI)					H75										
-30HG...100 psi (ANSI)					H78										
-30HG...150 psi (ANSI)					H79										
-30HG...220 psi (ANSI)					H81										
-30HG...300 psi (ANSI)(4)					H82										
Kind of pressure															
Relative (gauged)						R									
Absolute						A									
Output signal															
20...4 mA							A0								
4...20 mA							A1								
0...10 V							A2								
1...5 V							A3								
0...5 V							A4								
0.5...4.5 V							A5								
10...0 V							A7								
Output Connection															
M12-A, 4-pin high temperature								24							
Fischer, 4-pin, stainl. steel								56							

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Ordering information

Ordering key - Configuration possibilities see website

	PBMH	-	2	#	###	#	##	##	##	#	#	2	0	0	#
Process connection															
BHC 3A DN 38 (B01)(3)									50						
ISO 2852 (Tri-Clamp), DN 33.7; 38, Ø 50.5 (C04)(1)									51						
Tri-Clamp, DN 3/4, Ø 24.9 (ohne 3-A) (C01)(2)									52						
ISO 2852 (Tri-Clamp), DN 25, Ø 50.5 (C03)(1)									53						
ISO 2852 (Tri-Clamp), DN 40; 51, Ø 64.0 (C05)(1)									54						
BHC 3A DN 76 (B02)(3)									56						
ISO 2852 (Tri-Clamp), DN 21.3, Ø 34.0 (C02)(2)									57						
DIN 11864-3-A BKS (Aseptic Clamp), DN25, Ø 50.5 (H41)(3)									58						
BHC 3A DN 38, with cooling neck (B01)(3)									80						
ISO 2852 (Tri-Clamp), DN 33.7; 38, Ø 50.5 with cooling neck (C04)(1)									81						
Tri-Clamp, DN 3/4, Ø 24.9 (without 3-A) with cooling neck (C01)(2)									82						
ISO 2852 (Tri-Clamp), DN 25, Ø 50.5 with cooling neck (C03)(1)									83						
ISO 2852 (Tri-Clamp), DN 40; 51, Ø 64.0 with cooling neck (C05)(1)									84						
BHC 3A DN 76, with cooling neck (B02)(3)									86						
ISO 2852 (Tri-Clamp), DN 21.3, Ø 34.0 with cooling neck (C02)(2)									87						
Process connection material															
Stainless steel 1.4435 AISI 316L										5					
Stainless steel AISI 316L, 1.4435 electropolished Ra 0.4										F					
Seal															
None											0				
EPDM											2				
EPDM EHEDG											7				
Oil filling															
NSF H1 listed (FDA approved)												2			
Display															
Without display													0		
Explosion protection															
Without														0	
Approvals															
Standard approvals															0
EAC															7

(1) EHEDG only with special gasket
(2) EHEDG not included
(3) EHEDG included
(4) (not UL-certified)

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