

PBMH

PBMH-2#####0##

Overview

- 3-A sanitary standards, FDA-compliant, EHEDG-certified
- Resistant to all common CIP cleaning media and SIP-capable (150 °C max, < 30 min)
- Versions available for high media temperatures (200 °C)
- Surface roughness connection $Ra \leq 0.8$ 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
- Absolute pressure, relative pressure and vacuum measurement



Technical data

Performance characteristics

Measuring range	-1 ... 40 bar
Min. measuring span	0.1 bar
Max. measuring span	40 bar
Pressure type	Absolute Relative (gauged)
Standard error of measurement (BFSL)	± 0.04 % FS ± 0.1 % FS Including non-linearity, hysteresis and non-repeatability according BFSL For turndown, multiply this value by the applied turndown ratio
Max. measuring error	± 0.1 % FS ± 0.25 % FS 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
Temperature coefficient	≤ 0.03 % FS/10 K, measuring span ≤ 0.03 % FS/10 K, zero point
Compensated temperature range	-40 ... 85 °C
Long term stability	≤ 0.1 % FS/a
Max. turndown ratio	5 : 1
Rise time (10 ... 90 %)	≤ 5 ms

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
Process pressure	Refer to section "Operating conditions"
Process temperature	-40 ... 125 °C, without cooling neck -40 ... 200 °C, with cooling neck

Process connection

Connection variants	Refer to section "Dimensional drawings"
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
Wetted parts material, membrane	AISI 316L (1.4435)
Wetted parts material, process connection	AISI 316L (1.4404) AISI 316L (1.4435)
Surface roughness (in contact with medium)	
Membrane	$Ra \leq 0.4$ μ m
Process connection Baumer Hygienic Connection	$Ra \leq 0.8$ μ m
Process connection Tri-Clamp	$Ra \leq 0.4$ μ m
Process connection Varivent®	$Ra \leq 0.8$ μ m
Weld joint	$Ra \leq 0.8$ μ m

Ambient conditions

Bump (EN 60068-2-29)	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 g ² / Hz, > 10 gRMS (20 Hz ... 1 kHz), 30 min. per axis

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Ambient conditions

Degree of protection (EN 60529)	IP 65 , with connector DIN EN 175301-803 A (DIN 43650 A), 4-pin IP 67 , with connection head IP 67 , with connector M12-A, 4-pin IP 67 , with shielded cable
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Operating temperature range	-40 ... 85 °C
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Storage temperature range	-40 ... 85 °C
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Output signal

Load resistance	> 5 kΩ, with voltage output $R = (U_{ver} - 8 V)/20 \text{ mA}$, with current output
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Shunt resistance	$R_s \leq (V_s - 8 V)/0.0205 A$ $R_s \leq 750 \Omega$, $V_s = 24 V$
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Short circuit protection	Yes
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Current output	4 ... 20 mA , 2-wire 20 ... 4 mA , 2-wire
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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 ... 0V , 3-wire
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Insulation resistance	> 100 MΩ , 500 V DC
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Housing

Overall size	Refer to section "Dimensional drawings"
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Style	Compact transmitter
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Material	AISI 316L (1.4404)
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Electrical connection

Cable gland	Cable Ø 8 ... 10, stainless steel
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Cable outlet	1.5 m, 3-wire, shielded
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Connector	DIN EN 175301-803 A (DIN 43650 A), 4-pin M12-A, 4-pin
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Power supply

Voltage supply range	13 ... 30 V DC , with voltage output 8 ... 30 V DC , with current output
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ATEX II 1/2G Ex ia IIC T3/T4/T6 Ga/Gb

Please note	For the application in Ex zone you have to respect the conditions mentioned in the ATEX Type Examination Certificate (SEV 11 ATEX 0129). You will find the relevant certificates and instructions at www.baumer.com
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Internal capacitance, Ci	31 nF
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Internal inductance, Li	3 μH
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Maximum values for barrier selection, li	100 mA
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Maximum values for barrier selection, Pi	750 mW
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Maximum values for barrier selection, Ui	30 V DC , max.
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Temperature class, T4	-40 < Tamb < 85 °C
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Temperature class, T6	-40 < Tamb < 70 °C
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ATEX II 1/2G Ex ia IIC T4/T6 Ga/Gb

Please note	-40 < Tamb < 70 °C
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ATEX II 1/2G Ex ia IIC T4/T6 Ga/Gb

Internal capacitance, Ci	31 nF
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Internal inductance, Li	3 μH
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Maximum values for barrier selection, li	100 mA
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Maximum values for barrier selection, Pi	750 mW
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Maximum values for barrier selection, Ui	30 V DC , max.
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Temperature class, T4	-40 < Tamb < 85 °C
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ATEX II 1D Ex ia IIIC T107°C IP6X Da

Please note	For the application in Ex zone you have to respect the conditions mentioned in the ATEX Type Examination Certificate (SEV 11 ATEX 0129). You will find the relevant certificates and instructions at www.baumer.com
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Degree of protection for cable accessories	IP 65
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Temperature class, T107 °C	-40 < Tamb < 85 °C
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Voltage supply range, Un	30 V DC , max.
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ATEX II 1G Ex ia IIC T3/T4/T6 Ga,

Please note	For the application in Ex zone you have to respect the conditions mentioned in the ATEX Type Examination Certificate (SEV 11 ATEX 0129). You will find the relevant certificates and instructions at www.baumer.com
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Internal capacitance, Ci	31 nF
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Internal inductance, Li	3 μH
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Maximum values for barrier selection, li	100 mA
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Maximum values for barrier selection, Pi	750 mW
--	--------

Maximum values for barrier selection, Ui	30 V DC , max.
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Temperature class, T4	-40 < Tamb < 85 °C
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Temperature class, T6	-40 < Tamb < 70 °C
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ATEX II 1G Ex ia IIC T4/T6 Ga

Please note	For the application in Ex zone you have to respect the conditions mentioned in the ATEX Type Examination Certificate (SEV 11 ATEX 0129). You will find the relevant certificates and instructions at www.baumer.com
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Internal capacitance, Ci	31 nF
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Internal inductance, Li	3 μH
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Maximum values for barrier selection, li	100 mA
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Maximum values for barrier selection, Pi	750 mW
--	--------

Maximum values for barrier selection, Ui	30 V DC , max.
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Temperature class, T4	-40 < Tamb < 85 °C
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Temperature class, T6	-40 < Tamb < 70 °C
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Technical data

Compliance and approvals

EMC	2004/108/EC EN 61000-6-2 EN 61000-6-3
Explosion protection	ATEX II 1/2G Ex ia IIC T4/T6 Ga/Gb ATEX II 1/2G Ex ia IIC T3/T4/T6 Ga/Gb ATEX II 1D Ex ia IIC T107 °C IP6X Da ATEX II 1G Ex ia IIC T4/T6 Ga ATEX II 1G Ex ia IIC T3/T4/T6 Ga

Compliance and approvals

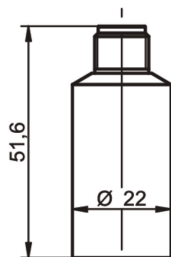
Hygiene	3-A (74-06) EHEDG I
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Operating conditions

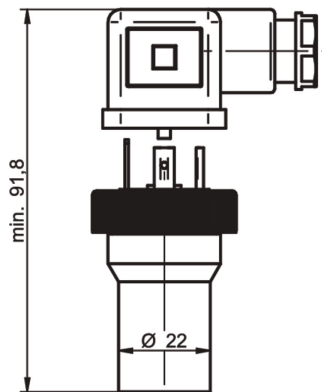
Measuring range (bar)							Proof pressure (bar)	Burst Pressure (bar)
0 ... 0,1 0 ... 0,16 0 ... 0,25							1	2
-0,1 ... 0,1	-0,2 ... 0,2	-1 ... 0	-1 ... 0,6	0 ... 0,4	0 ... 0,6	0 ... 1	3	6
	-1 ... 1,5	-1 ... 3	-1 ... 5	0 ... 1,6	0 ... 2	0 ... 2,5	15	30
		-1 ... 9	-1 ... 15	0 ... 6	0 ... 10	0 ... 16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

Dimensional drawings

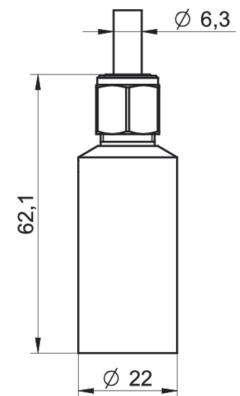
Housing



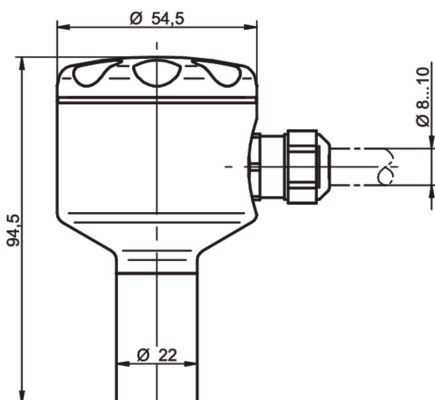
Housing with connector M12-A, 4-pin



Housing with connector DIN EN 175301-803 A (DIN 43650 A), 4-pin



Housing with cable outlet, 3-wire, 1.5 m length

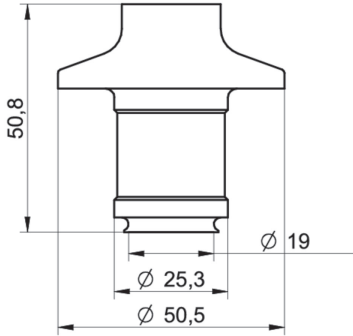


Field housing with cable gland

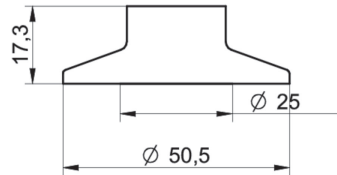
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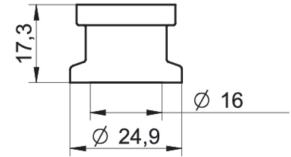
Process connection



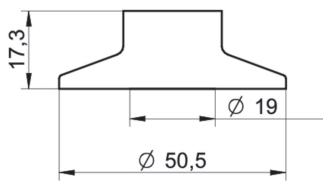
B01-50
BHC 3A DN 38, membrane Ø 25 mm (BCID: B01)



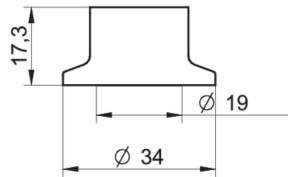
C04-51
Tri-Clamp Ø 50.5, membrane Ø 25 mm (BCID: C04)



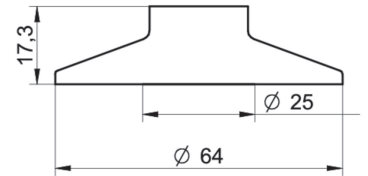
C01-52
Tri-Clamp Ø 24.9, membrane Ø 16 mm (BCID: C01)



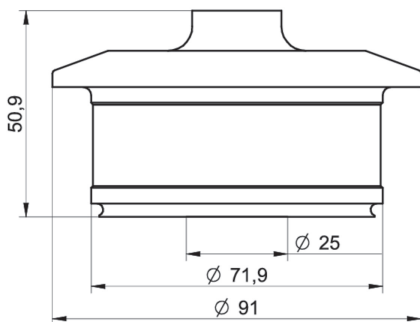
C03-53
Tri-Clamp Ø 50.5, membrane Ø 19 mm (BCID: C03)



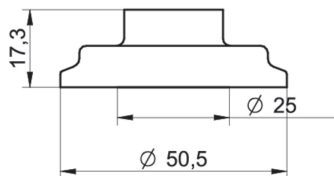
C02-57
Tri-Clamp Ø 34.0, membrane Ø 19 mm (BCID: C02)



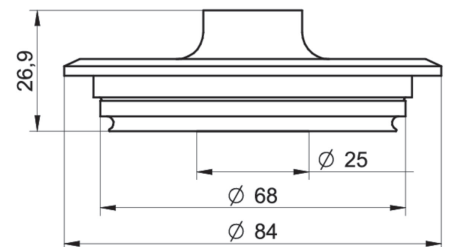
C05-54
Tri-Clamp Ø 64.0, membrane Ø 25 mm (BCID: C05)



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



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

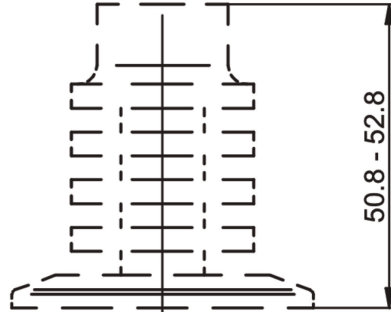
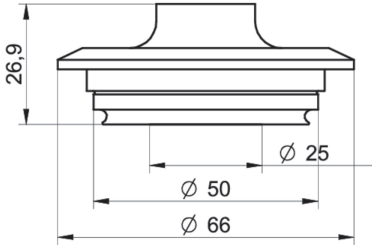


V02-61
Varivent® DN 32 ... 125; 1 1/2" ... 6" (Type N), Ø 68, membrane Ø 25 mm (BCID: V02)

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Process connection



V01-62
Varivent® DN 25; 1" (Type F), Ø 50, membrane
Ø 25 mm (BCID: V01)

Cooling neck

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Electrical connection

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

Ordering information

Ordering key - Configuration possibilities see website

Product	PBMH - 2 # ### # ## ## ## # # # 0 # #
Product	PBMH
Housing material	2
Accuracy	4
±0.25 % FS	5
±0.10 % FS	

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Ordering key - Configuration possibilities see website

	PBMH	-	2	#	###	#	##	##	##	#	#	#	0	#	#
Measuring range															
0...0,1 bar (EN)															B08
0...0,16 bar (EN)															B09
0 ... 0.25 bar (EN)															B10
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)															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)															B26
0...40 bar (EN)															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
-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)															B82
0...5 bar (EN)															B98
0...1.5 psi (ANSI)															H08
0...4 psi (ANSI)															H10
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)															H1E
-30Hg...600 psi (ANSI)															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)															H25
0...400 psi (ANSI)															H26

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Ordering key - Configuration possibilities see website

	PBMH	-	2	#	###	#	##	##	##	#	#	#	0	#	#	
0...600 psi (ANSI)																H27
-30HG...60 psi (ANSI)																H2C
0...5 psi (ANSI)																H2N
0...2 psi (ANSI)																H2Y
-30HG...0 psi (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)																H82
0...3 psi (ANSI)																H93
0...1 mH ₂ O (EN)																J08
0...1,6 mH ₂ O (EN)																J09
0...2,5 mH ₂ O (EN)																J10
0...4 mH ₂ O (EN)																J11
0...6 mH ₂ O (EN)																J12
0...10 mH ₂ O (EN)																J15
0...16 mH ₂ O (EN)																J16
0...20 mH ₂ O (EN)																J17
0...25 mH ₂ O (EN)																J18
0...40 mH ₂ O (EN)																J19
0...60 mH ₂ O (EN)																J20
0...100 mH ₂ O (EN)																J22
0...160 mH ₂ O (EN)																J24
0...200 mH ₂ O (EN)																J25
0...250 mH ₂ O (EN)																J26
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																14
DIN EN 175301-803 A (DIN 43650 A), 4-pin																44
Cable outlet 1.5 m, 3-wire, shielded																53
Connection head, cable gland IP67																54
Process connection																
BHC 3A DN 38 (B01)																50
ISO 2852 (Tri-Clamp), DN 33.7; 38, Ø 50.5 (C04)																51
DIN 32676-C (Tri-Clamp), DN 3/4, Ø 24.9 (without 3-A) (C01)																52
ISO 2852 (Tri-Clamp), DN 25, Ø 50.5 (C03)																53
ISO 2852 (Tri-Clamp), DN 40; 51, Ø 64.0 (C05)																54

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Ordering key - Configuration possibilities see website

	P	B	M	H	-	2	#	###	#	##	##	##	#	#	#	0	#	#		
BHC 3A DN 76 (B02)																				56
ISO 2852 (Tri-Clamp), DN 21.3, Ø 34.0 (C02)																				57
DIN 11864-3-A (Aseptic Clamp), DN25, Ø 50.5 (H41)																				58
Varivent® DN 32 ... 125; 1 1/2 ... 6 (Type N), Ø 68 (V02)																				61
Varivent® DN 25; 1 (Type F), Ø 50 (V01)																				62
ISO 2852 (Tri-Clamp), DN 33.7; 38, Ø 50.5 with cooling neck (C04)																				81
DIN 32676-C (Tri-Clamp), DN 3/4, Ø 24.9 (without 3-A) with cooling neck (C01)																				82
ISO 2852 (Tri-Clamp), DN 25, Ø 50.5 with cooling neck (C03)																				83
ISO 2852 (Tri-Clamp), DN 40; 51, Ø 64.0 with cooling neck (C05)																				84
ISO 2852 (Tri-Clamp), DN 21.3, Ø 34.0 with cooling neck (C02)																				87
DIN 11864-3-A (Aseptic Clamp), DN25, Ø 50.5 with cooling neck (H41)																				88
Process connection material																				
Stainless steel 1.4404 AISI 316L																				2
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																				
Standard oil																				1
NSF H1 listed (FDA approved)																				2
Display																				
Without display																				0
ATEX																				
Standard safety																				0
ATEX according to SEV 11 ATEX 0129																				1
Approvals																				
Standard approvals																				0
EAC																				7