PBMH

Fully welded pressure transmitter for hygenic applications

PBMH-2###############0#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 ≤ 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
- Optionally available with Ex certification (4 ... 20 mA output)

Picture similar

Technical data

Performance characteristics	
Pressure type	Absolute Relative (gauged)
Compensated temperature range	-40 … 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
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	0.1 bar
Rise time (10 ... 90 %)	≤ 5 ms
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
Process connection	
Connection variants	Refer to section "Dimensional drawings"
Wetted parts material, process connection	AISI 316L (1.4404) 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 Baumer Hygienic Connection	Ra ≤ 0.8 µm
Process connection Tri-Clamp	Ra ≤ 0.4 µm
Process connection Varivent®	Ra ≤ 0.8 µm
Weld joint	Ra ≤ 0.8 µm
Ambient conditions	
Operating temperature range	-40 … 85 °C
Storage temperature range	-40 … 85 °C

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Technical data

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
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
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)
Electrical connection	
Connector	DIN EN 175301-803 A (DIN 43650 A), 4-pin M12-A, 4-pin
Cable gland	Cable Ø 8 … 10, stainless steel
Cable outlet	1.5 m, 3-wire, shielded
Power supply	
Voltage supply range	13 … 30 V DC , with voltage output 8 … 30 V DC , with current output
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 type examination certificate (SEV 11 ATEX 0129 / IECEx SEV 22.0006).You will find the relevant certificates and instructions at www.baumer.com
Maximum values for barrier selection, Ui	30 V DC , max.
Maximum values for barrier selection, Ii	100 mA
Maximum values for barrier selection, Pi	750 mW
Internal capacitance, Ci	58 nF
Internal inductance, Li	0.22 µH

ATEX II 1/2G Ex ia IIC T4/T6 Ga/Gb	
Please note	For the application in Ex zone you have to respect the conditions mentioned in the type examination certificate (SEV 11 ATEX 0129 / IECEx SEV 22.0006).You will find the relevant certificates and instructions at www.baumer.com
Maximum values for barrier selection, Ui	30 V DC , max.
Maximum values for barrier selection, Ii	100 mA
Maximum values for barrier selection, Pi	750 mW
Internal capacitance, Ci	58 nF
Internal inductance, Li	0.22 µH
ATEX II 1D Ex ia IIIC T (200) 107°C IP6X Da	
Please note	For the application in Ex zone you have to respect the conditions mentioned in the type examination certificate (SEV 11 ATEX 0129 / IECEx SEV 22.0006).You will find the relevant certificates and instructions at www.baumer.com
Degree of protection for cable accessories	IP 65
Maximum values for barrier selection, Ui	30 V DC , max.
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 type examination certificate (SEV 11 ATEX 0129 / IECEx SEV 22.0006).You will find the relevant certificates and instructions at www.baumer.com
Maximum values for barrier selection, Ui	30 V DC , max.
Maximum values for barrier selection, Ii	100 mA
Maximum values for barrier selection, Pi	750 mW
Internal capacitance, Ci	58 nF
Internal inductance, Li	0.22 µH
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 type examination certificate (SEV 11 ATEX 0129 / IECEx SEV 22.0006).You will find the relevant certificates and instructions at www.baumer.com
Maximum values for barrier selection, Ui	30 V DC , max.
Maximum values for barrier selection, Ii	100 mA
Maximum values for barrier selection, Pi	750 mW
Internal capacitance, Ci	58 nF
Internal inductance, Li	0.22 µH

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Technical data

Compliance and approvals

EMC	EN 61000-6-3 2014/30/EU (EMC) 2014/34/EU (EX)
Hygiene	3-A (74-07)
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 IIIC T (200) 107 °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

Pressure directive	EHEDG EL Class I

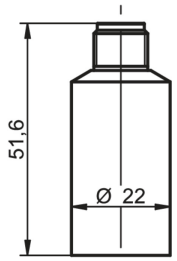
Operating conditions

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	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

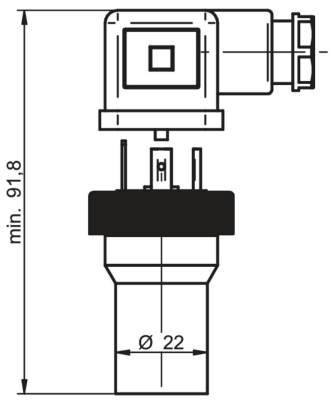
Explosion protection (with 4 … 20 mA output signal only)	Cooling neck	Connectors [order code]	Order key
ATEX II 1G Ex ia IIC T4/T6 Ga	without	M12-A [14]	PBMH-######A114######1#
		Connection head [54]	PBMH-######A154######1#
ATEX II 1G Ex ia IIC T3/T4/T6 Ga	with	M12-A [14]	PBMH-######A1148#####1#
		Connection head [54]	PBMH-######A1548#####1#
ATEX II 1D Ex ia IIIC T (200) 107 °C IP6X DA	all	M12-A [14] Connection head [54] DIN EN 175301-803 A [44]	PBMH-######A1########1#
ATEX II 1/2G Ex ia IIC T4/T6 Ga/Gb	without	DIN EN 175301-803 A [44]	PBMH-######A144######1#
ATEX II 1/2G Ex ia IIC T3/T4/T6 Ga/Gb	with	DIN EN 175301-803 A [44]	PBMH-######A1448#####1#

Dimensional drawings (mm)

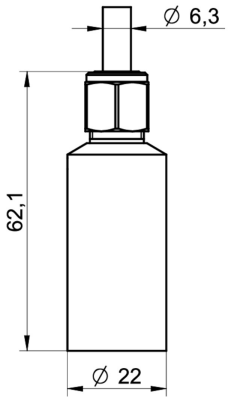
Housing



Housing with connector M12-A, 4-pin



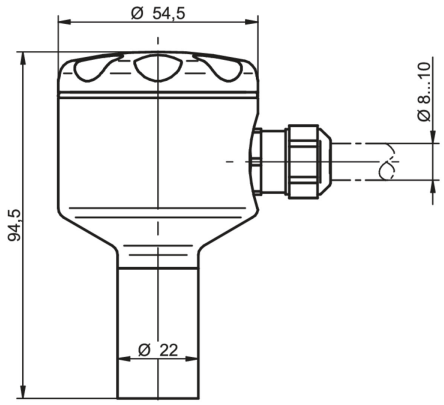
Housing with connector DIN EN 175301-803 A (DIN 43650 A), 4-pin



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

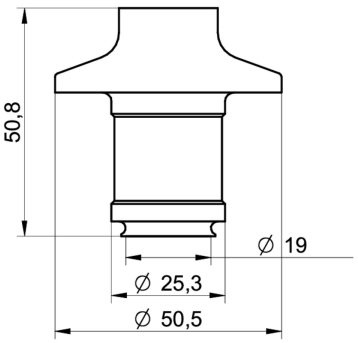
Dimensional drawings (mm)

Housing

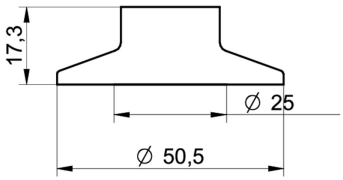


Field housing with cable gland

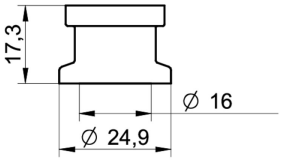
Process connection



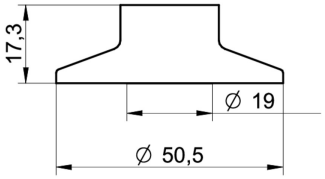
B01-50
BHC 3A DN 38, membrane Ø 19 mm (BCID: B01)



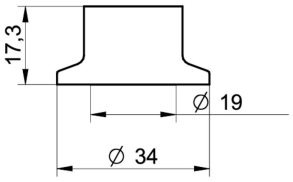
C04-51
Tri-Clamp Ø 50.5, membrane Ø 25 mm (BCID: C04)



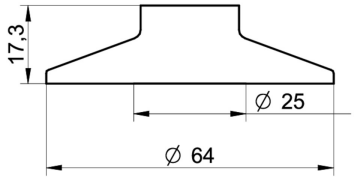
C01-52
Tri-Clamp Ø 24.9, membrane Ø 16 mm (BCID: C01)



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



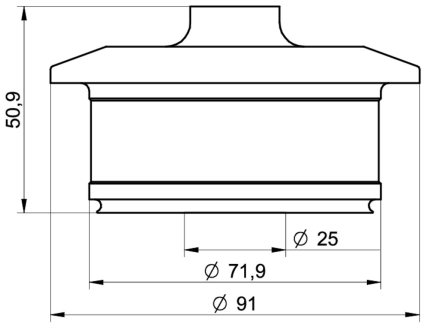
C02-57
Tri-Clamp Ø 34.0, membrane Ø 19 mm (BCID: C02)



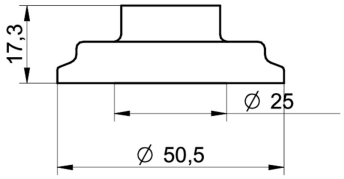
C05-54
Tri-Clamp Ø 64.0, membrane Ø 25 mm (BCID: C05)

Dimensional drawings (mm)

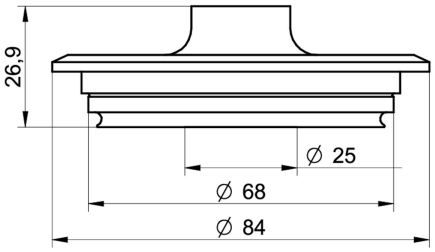
Process connection



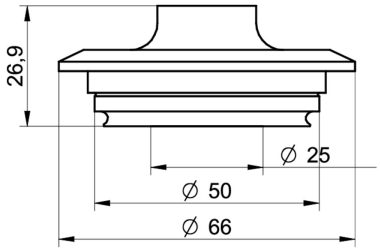
B02-56
BHC 3A DN 76, membrane Ø 25 mm (BCID: B02)



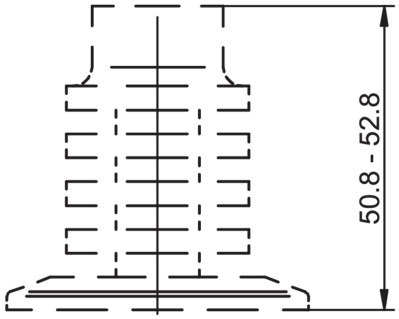
H51-58
DIN 11864-3-A BKS (Aseptic Clamp), DN25, Ø 50.5, membrane Ø 25 mm (BCID: H41)



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



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



Cooling neck

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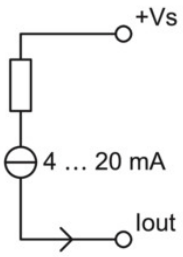
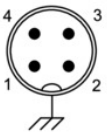
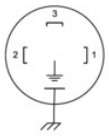
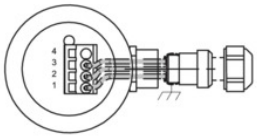
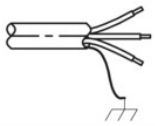
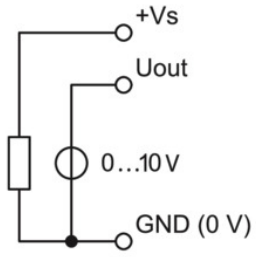
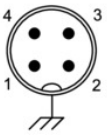
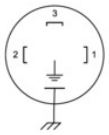
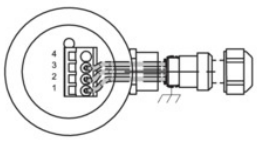
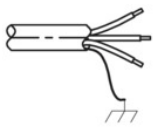
Electrical connection

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

Ordering information

Ordering key - Configuration possibilities see website

	PBMH	-	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...0,1 bar (EN)					B08										

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Ordering information

Ordering key - Configuration possibilities see website

	PBMH	-	2	#	###	#	##	##	##	#	#	#	0	#	0
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										
0...600 psi (ANSI)					H27										
-30HG...60 psi (ANSI)					H2C										
0...5 psi (ANSI)					H2N										

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Ordering information

Ordering key - Configuration possibilities see website

	PBMH	-	2	#	###	#	##	##	##	#	#	#	0	#	0
0...2 psi (ANSI)					H2Y										
-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)					H82										
0...3 psi (ANSI)					H93										
0...1 mH2O (EN)					J08										
0...1,6 mH2O (EN)					J09										
0...2,5 mH2O (EN)					J10										
0...4 mH2O (EN)					J11										
0...6 mH2O (EN)					J12										
0...10 mH2O (EN)					J15										
0...16 mH2O (EN)					J16										
0...20 mH2O (EN)					J17										
0...25 mH2O (EN)					J18										
0...40 mH2O (EN)					J19										
0...60 mH2O (EN)					J20										
0...100 mH2O (EN)					J22										
0...160 mH2O (EN)					J24										
0...200 mH2O (EN)					J25										
0...250 mH2O (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							

PBMH

Fully welded pressure transmitter for hygenic applications

PBMH-2###############0#0

Ordering information

Ordering key - Configuration possibilities see website

	PBMH	-	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)(1)									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)(1)									57						
DIN 11864-3-A BKS (Aseptic Clamp), DN25, Ø 50.5 (H41)(3)									58						
Varivent® DN 32 … 125; 1 1/2 … 6 (Type N), Ø 68 (V02)(3)									61						
Varivent® DN 25; 1 (Type F), Ø 50 (V01)(2)									62						
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)(1)									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)(1)									87						
DIN 11864-3-A (Aseptic Clamp), DN25, Ø 50.5 with cooling neck (H41)(3)									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		
Explosion protection															
Without														0	
ATEX according to SEV 11 ATEX 0129														1	
Approvals															
Standard approvals															0

(1) EHEDG only with special gasket
(2) EHEDG not included
(3) EHEDG included