

PFMH

PFMH-##.####.#####.###0##.##0#

Overview

- Flush membrane with 3-A sanitary standards (FDA-compliant) and EHEDG
- Resistant to all common CIP cleaning media and SIP-capable (150 °C max, < 30 min)
- Versions available for high media temperatures (200 °C)
- Built in graphical display (CombiView DFON optional) and programmable by touch screen or with FlexProgrammer 9701
- Optionally available with additional relays and 4 ... 20 mA with HART
- Available with optional ATEX approval (4 ... 20 mA output signal)



Technical data

Performance characteristics

Measuring range	-1 ... 68 bar
Min. measuring span	0.05 bar
Max. measuring span	69 bar
Pressure type	Absolute Relative (gauged)
Standard error of measurement (BFSL)	± 0.04 % FSR , up to 2:1 turndown ratio ± 0.1 % FSR , up to 4:1 turndown ratio Including non-linearity, hysteresis and non-repeatability according BFSL For turndown, multiply this value by the applied turndown ratio
Max. measuring error	± 0.1 % FSR , up to 2:1 turndown ratio ± 0.25 % FSR , up to 4:1 turndown ratio 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	≤ 0.05 % FSR/10 K , measuring span ≤ 0.05 % FSR/10 K , zero point
Compensated temperature range	-40 ... 85 °C
Long term stability	≤ 0.1 % FSR/a , IEC 770 6.3.2
Max. turndown ratio	10 : 1
Rise time (10 ... 90 %)	≤ 0.3 s
Sample time	≤ 0.3 s
Power-up time	< 10 s

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 conditions

Process temperature	-40 ... 125 °C , without cooling neck -40 ... 200 °C , with cooling neck
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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 (8% milk fat max.)
Wetted parts material, membrane	AISI 316L (1.4435)
Wetted parts material, process connection	AISI 316L (1.4404)
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 Ra ≤ 0.4 µm, electropolished, optional
Weld joint	Ra ≤ 0.8 µm

Ambient conditions

Vibration	DNV high vibration strain, class B
Vibration (sinusoidal) (EN 60068-2-6)	1.6 mm p-p (2 ... 25 Hz), 4 g (25 ... 100 Hz), 1 octave / min.
Degree of protection (EN 60529)	IP 67 , with cable gland IP 69K , with connector M12
Humidity	< 98 % RH , condensing
Operating temperature range	-40 ... 85 °C
Storage temperature range	-40 ... 85 °C

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Technical data

Output signal

Current output	4 ... 20 mA 4 ... 20 mA , + HART® 20 ... 4 mA , programmable
Load resistance	$R_Q = (U_{supply} - 10 \text{ V})/20 \text{ mA}$
Insulation resistance	> 100 MΩ , 500 V DC
Sensor failure	20 ... 23 mA , programmable 3.6 ... 4 mA , programmable

Housing

Overall size	Refer to section "Dimensional drawings"
Style	Bottom process connection Rear process connection
Material	AISI 304 (1.4301)

Electrical connection

Cable gland	M16x1.5, plastic M16x1.5, stainless steel M20x1.5, plastic M20x1.5, stainless steel
Connector	M12-A, 5-pin, stainless steel M12-A, 8-pin, stainless steel

Power supply

Voltage supply range	10 ... 35 V DC
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ATEX II 1G Ex ia IIC T5

Maximum values for barrier selection, U _i	30 V DC , max.
Maximum values for barrier selection, I _i	100 mA
Maximum values for barrier selection, P _i	750 mW
Internal capacitance, C _i	< 15 nF
Internal inductance, L _i	< 10 μH
Temperature class, T1 ... T5	-20 < Tamb < 60 °C Zone 0 and 20 -40 < Tamb < 65 °C Zone 1/2 and 21/22

ATEX II 3G Ex nA II T5

Voltage supply range	10 ... 35 V DC
Current rating, I _n	100 mA
Temperature class, T1 ... T5	-30 < Tamb < 65 °C

Compliance and approvals

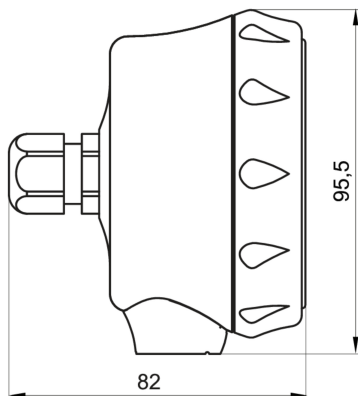
EMC	EN 61000-6-2 EN 61000-6-3
Explosion protection	ATEX II 1D Ex ia IIIC T100 °C Da ATEX II 1G Ex ia IIC T5 ATEX II 3G Ex nA II T5
Hygiene	3-A EHEDG FDA

Operating conditions

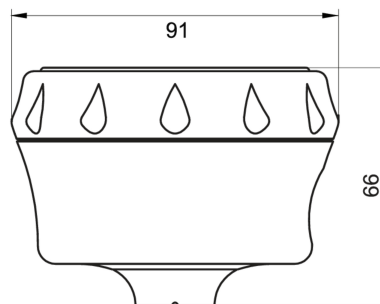
Measuring range (bar)	Proof pressure (bar)	Burst Pressure (bar)
0 ... 0.345	1	2
-1 ... 1	3	6
-1 ... 5	15	30
-1 ... 20	60	120
-1 ... 34	70	140
-1 ... 68	135	270

Dimensional drawings

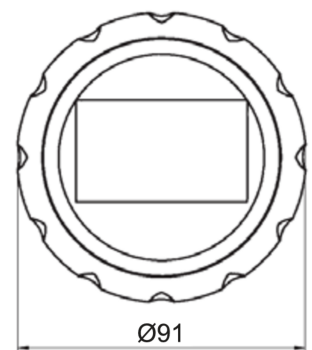
Housing



FlexHousing with bottom process connection
Bottom process connection

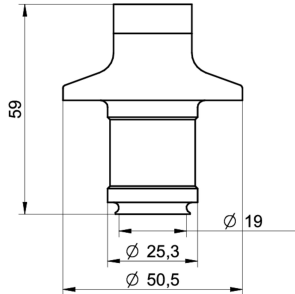


FlexHousing with rear process connection
Rear process connection

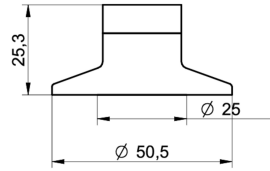


Front view
Front view

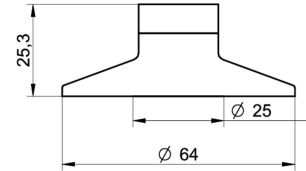
Process connection



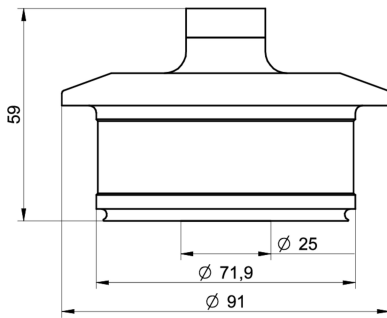
BHC 3A DN 38, membrane Ø 25 mm (BCID: B01)



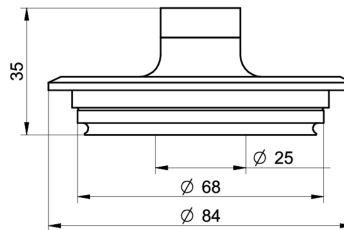
Tri-Clamp Ø 50.5, membrane Ø 25 mm (BCID: C04)



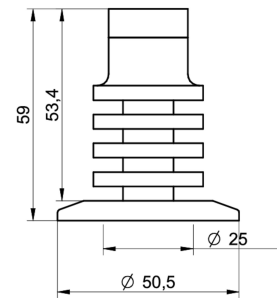
Tri-Clamp Ø 64.0, membrane Ø 25 mm (BCID: C05)



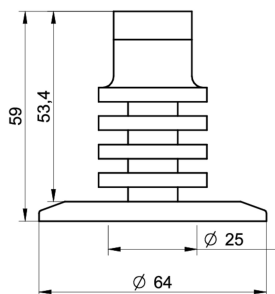
BHC 3A DN 76, membrane Ø 25 mm (BCID: B02)



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



Tri-Clamp Ø 50.5, membrane Ø 25 mm (BCID: C04) with cooling neck



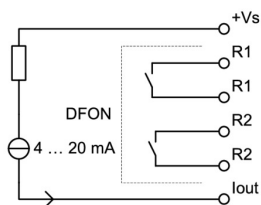
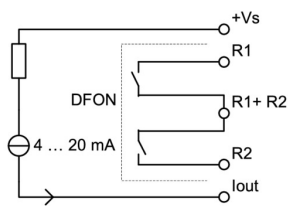
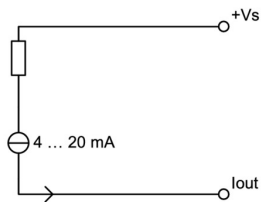
Tri-Clamp Ø 64.0, membrane Ø 25 mm (BCID: C05) with cooling neck

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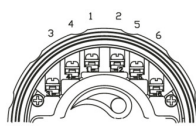
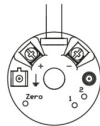
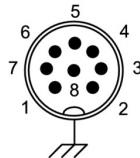
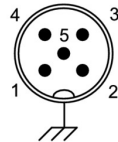
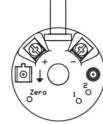
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Electrical connection

Equivalent circuit



Electrical connection



Function

Pin assignment

+Vs

+

Iout

-

+Vs

1

Iout

3

R1

5

R2

4

R1 + R2

2

+Vs

2

Iout

7

R1

5, 6

R2

3, 4

n.c.

1, 8

+Vs

+

Iout

-

R1

5, 6

R2

3, 4

n.c.

1, 2

Ordering information

Ordering key - Configuration possibilities see website

	PFMH	-	#	#	.	###	#	.	##	##	#	.	##	#	0	#	.	#	0	#	####
Product	PFMH																				
Housing																					
Stainless steel 1.4301 / AISI304							5														
Bottom connection																					
Stainless steel 1.4301 / AISI304							6														
Rear connection																					
Accuracy																					
±0.25 % FS							4														
±0.10 % FS							5														
Pressure range and unit																					
Min. 0.0 / Max 0.345 Bar																					
(not vacuum or absolute)																					
Min. -1.0 / Max 1.0 Bar(0...1 bar abs)																					
Min. -1.0 / Max 5.0 Bar (0...5 bar abs)																					
Min. -1.0 / Max 20.0 Bar (0...20 bar abs)																					
Min. -1.0 / Max 34.0 Bar (0...34 bar abs)																					
Min. -1.0 / Max 68.0 Bar (0...68 bar abs)																					
Kind of pressure																					
Relative (gauged)																					
Absolute																					
Output signal																					
4...20 mA																					
4...20 mA + HART®																					

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Ordering key - Configuration possibilities see website

	PFMH	-	#	#	.	###	#	.	##	##	#	.	##	#	0	#	#	.	#	0	#	####	
Output Connection																							
M12-A, 5-pin																						15	
M12-A, 8-pin																						18	
Cable gland, M16x1.5																						55	
Cable gland, M20x1.5																						57	
Material of el. connection																							
Plastic																						1	
Stainless steel, AISI 304 (1.4301)																						3	
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 (C01)																						52	
ISO 2852 (Tri-Clamp), DN 40; 51, Ø 64.0 (C05)																						54	
BHC 3A DN 76 (B02)																						56	
Varivent® DN 32 ... 125; 1 1/2 ... 6 (Type N), Ø 68 (V02)																						61	
ISO 2852 (Tri-Clamp), DN 33.7; 38, Ø 50.5 with cooling neck (C04)																						81	
ISO 2852 (Tri-Clamp), DN 40; 51, Ø 64.0 with cooling neck (C05)																						84	
Wetted parts material																							
Stainless steel 1.4404 / AISI 316L																						2	
Stainless steel 1.4435 BN2/AISI 316L, electro-polished, Ra<0.4																						F	
Seal																							
None																						0	
Oil filling																							
Standard oil																						1	
NSF H1 listed (FDA approved)																						2	
Display																							
Without display																						1	
With display, no relays activated																						2	
With display, with activated relays																						4	
ATEX																							
Standard safety																						0	
Ex nA II T5 (Gas)																						3	
Ex ia IIC T5 Ga or Ex ia IIIC T100°C Da (Gas or Dust)																						5	
Approvals																							
Standard approvals																						0	
Configuration																							
No configuration																						0	
Configuration of range																						1	
Configuration of range + display																						2	
Configuration of range + display incl. 2 relays																						3	
Option Surface																							
Surface Ra < 0,4 µm																						9059	
Surface electropolished																						9060	