Baumer
Passion for Sensors

CombiPress™ PFMH

Hygienic – Fully welded pressure transmitter with flush diaphragm

Main features

- Flush diaphragm
- Built in graphical display, *CombiView*™ DFON optional
- *HART*®
- ATEX
- 3A, FDA
- EHEDG (pending)
- Programmable by touch screen
- Easy and full programmable with FlexProgrammer 9701

Applications

- Food and beverage
- Pharmaceutical
- Water treatment
- General process industry

HD Hygienic Design | 3A | EHEDG | FDA | CIP | SIP | IP 69K | Ex

Main characteristics (20 °C)

Measuring range	-1.0...68.0 bar
Minimum range	50 mbar
Turn down	10:1
Long term stability	<0.1% FS / Year
Accuracy (Linearity, hysteresis and repeatabillity)	<±0.1% FS / <±0.25% FS
Process temperature range	Standard oil -40 … 125 °C (<150°C <60 min) NSF H1 listed oil (FDA approved) -5 … 125 °C (<150 °C <60 min)
Max. process temperature	200 °C (with cooling neck)

Technical specification

Measuring principle	Piezoresistive silicon sensor
Measuring ranges	-1 … 0 bar up to 0 … 68.0 bar
Min. range	0…0,05 bar, programmable
Type of pressure	Relative / Absolute
Turn down	10:1 FS
Accuracy (Linearity, Hysteresis, Repeatability)	0.1% FS@20°C up to 2:1 turn down 0.25% FS@20°C up to 4:1 turn down
Zero thermal drift	≦ ± 0.005% FS/°C
Span thermal drift	≦ ± 0.005% FS/°C
Annual stability, IEC 770 6.3.2	0.1% FS / Year
Response time (10 … 90%)	≤ 0.3 sec.
Sample time	≤ 0.3 sec.
Start up time	<10 sec.
Process connections	See page 3

Environment

Temperature	
Storage	-40…+85 °C
Media (without cooling neck)	-40…+125 °C
Short term (SIP)	150 °C for 60 min.
Media (with cooling neck)	-40…+200 °C
Ambient	-40…+85 °C
Protection rating, IEC 529	IP67 / IP69K, depending on electrical connection
Humidity, IEC 68-2-38	98%, condensing
Vibration	DNV high vibration strain, class B 1.6 mm 2…25Hz IEC60068-2-6, test FC 25…100 Hz, 4.0 g

Electrical specification

Output signal	4…20 mA, 20…4 mA, 4…20 mA *HART*®
Power Supply	10…35 VDC
Load impedance	$R_Q = (U_{supply}-10\ V) / 20\ mA$
Insulation resistance	>100 MΩ at 500 V
Sensor failure	Configurable, 3.6…4 or 20…23 mA
Electrical connections	M12 connector or M16 cable gland in stainless steel or plastic

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ATEX ia Gas / Dust

Approval	Gas Zone 0/1 Dust Zone 20/21	Ex II 1 G, Ex ia IIC T5 Ga Ex II 1 D, Ex ia IIIC T100°C Da
Voltage drop	U_{Disp}	4.5 or 6.5 VDC
T° class	T1 ... T5	Zone 0 and 20 -20 °C ... 60 °C Zone 1/2 and 21/22 -40°C ... 65 °C
Internal inductivity	L_i	< 10 µH
Internal capacity	C_i	< 15 nF
Barrier data	U_i I_i P_i	< 30 VDC < 0.1 A < 0.75 W

ATEX nA Gas

Approval	Gas Zone 2	Ex II 3 G, Ex nA II T5
Voltage drop	U_{Disp}	4.5 or 6.5 VDC
T° class	T1 ... T5	$-30 < T_{amb} < 65$ °C
Internal inductivity	L_i	< 10 µH
Internal capacity	C_i	< 15 nF
Max. voltage	U_{max}	< 35 VDC
Max. current	I_{max}	< 0.1 A

Surface roughness

Process connection	
DN38 ISO 2852 / TriClamp 1 1/2" / DIN 32676 Clamp	Ra ≤ 0.4 µm
DN51 ISO 2852 / DIN 32676 Clamp	Ra ≤ 0.4 µm
DN38 Hygienic connection	Ra ≤ 0.8 µm
DN76 Hygienic connection	Ra ≤ 0.8 µm
GEA Tuchenhagen Varivent® ball housing	Ra ≤ 0.8 µm
Weld joint	Ra ≤ 0.8 µm
Diaphragm	Ra ≤ 0.4 µm

Display specifications

Type	Graphically LCD
Front glass	Polycarbonate
Display modes	8 modes, programmable, e.g. value, bar graph, analogue, tank illustration
Background	White, green, red - programmable
Measuring range	-9999...99999
Digit height	Max. 22 mm
Accuracy	0,1% @ ambient -10…70 °C
Voltage drop	<4...6,5 VDC
Output	2 configurable relay output, 60 Vp, 75 mA
Programming	Touch screen or FlexProgrammer 9701

Further information can be found in separate data sheet for DFON, D21.09.

Material

Process connection	SS 1.4404, AISI 316L (Hastelloy-C)
Housing	SS 1.4301, AISI 304
Diaphragm	SS 1.4435, AISI 316L (Hastelloy-C)
Sealing	To be orderes separately See table page 3

Approvals

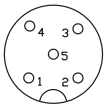
Apply to	EMC directive 2004/108/CE in accordance with EN61000-6-2, EN 61000-6-3 Pressure directive 97/23/CE FDA
Certificates	3A EHEDG (pending)

Measuring ranges and over pressure safety

	Pressure in bar					
Pressure range	0.0…0.345	-1.0…1.0	-1.0…5.0	-1.0…20.0	-1.0…34.0	-1.0…68.0
Over pressure	1	3	15	60	70	135
Burst pressure	2	6	30	120	140	270

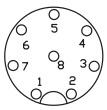
Electrical connections

M12, 5-wire

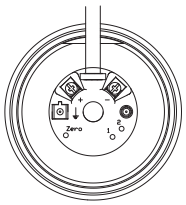


1 + supply, 4...20 mA
2 Common for relays
3 - supply, 4...20 mA
4 Relay 1
5 Relay 2

M12, 8-wire



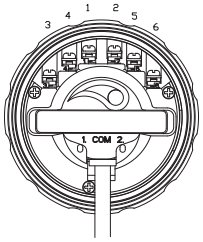
1 N.C.
2 + supply, 4...20 mA
3 Relay 1
4 Relay 1
5 Relay 2
6 Relay 2
7 - supply, 4...20 mA
8 N.C.



Cable gland

Transmitter
- 24VDC / - 4...20mA
+ 24VDC / +4...20mA
Com 1 Red clip (FlexProgrammer)
Com 2 Black clip (FlexProgrammer)

Display
1 N.C.
2 N.C.
3 Relay 1
4 Relay 1
5 Relay 2
6 Relay 2
Com 1 Red clip (FlexProgrammer)
Com 2 Black clip (FlexProgrammer)



Disposal of product and packing.
According to national laws or by returning t

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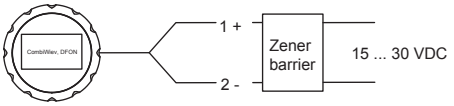
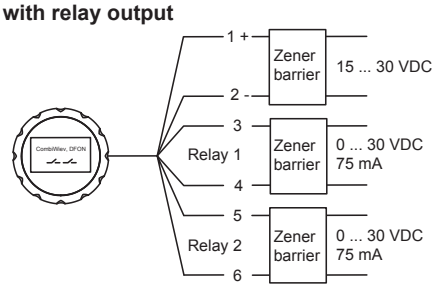
ATEX ia Gas/Dust

PFMx without relay output

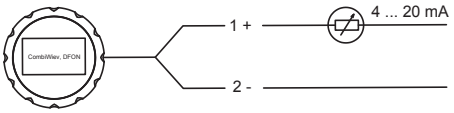


PFMx with relay output

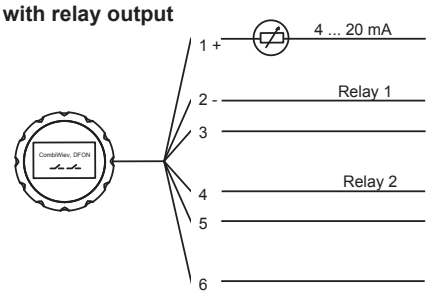


ATEX nA Gas

PFMx without relay output

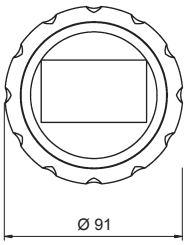


PFMx with relay output

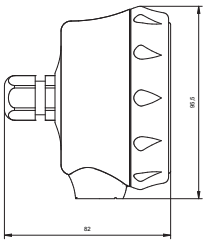


Dimensions (mm)

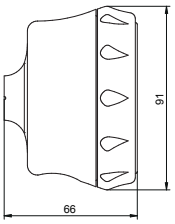
Front view



Bottom connection

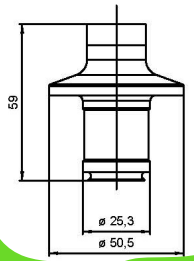


Rear connection

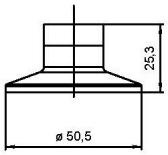


Process connections dimensions (mm)

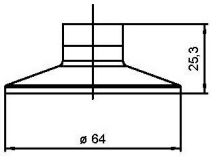
3A DN 38
Code 50



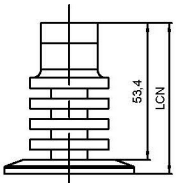
ISO 2852 DN 38
Code 51



2852 DN 51
Code 54

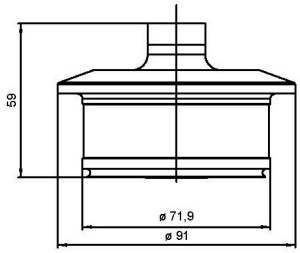


Cooling neck
high temperature

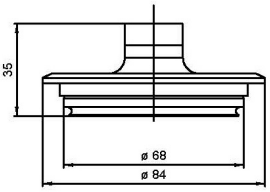


Standard		High temp.	LCN:
Code 51	→	Code 81	51 mm
Code 54	→	Code 84	51 mm

3A DN 76
Code 56



Variline® type N
Code 61



Accessories – seals

Seal type	Conn.	Material	Approvals		Item Number
O-ring	50	EPDM	3A	FDA	8126982
-	56	EPDM	3A	FDA	8126983
-	61	EPDM	3A	FDA	8126979
Gasket	51 - 81	EPDM	3A	FDA	8126980
-	54 - 84	EPDM	3A	FDA	8126981

Seal is to be purchased separately.
For other types and materials please see data sheet for accessories.

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Ordering details

Model	
CombiPress™	PFMH
Housing	
Stainless steel 1.4301 / AISI304 Bottom connection	5
Stainless steel 1.4301 / AISI304 Rear connection	6
Accuracy	
±0.25%	4
±0.10% (not range 0.345 mbar)	5
Pressure range and unit	
Min. 0.0 / Max 0.345 bar (vacuum and absolute are not available)	BC1
Min. -1.0 / Max 1.0 bar (0...1 bar abs)	BC2
Min. -1.0 / Max 5.0 bar (0...5 bar abs)	BC3
Min. -1.0 / Max 20.0 bar (0...20 bar abs)	BC4
Min. -1.0 / Max 34.0 bar (0...34 bar abs)	BC5
Min. -1.0 / Max 68.0 bar (0...68 bar abs)	BC6
Kind of pressure	
Relative	R
Absolute	A
Output signal	
4...20 mA	A1
4…20 mA + *HART*®	C1
Output Connection	
M12, 5 pins	15
M12, 8 pins	18
Cable gland, M16	55
Cable gland, M20	57
Material of el. connection	
Plastic	1
AISI 304	3
Process connection	
DN38 3A Hygienic Connection. 3A	50
DN38 ISO 2852 / TriClamp 1 1/2", 3A	51
DN51 ISO 2852 Clamp. 3A	54
DN76 Hygienic Connection. 3A (max. range 5 bar)	56
Variline® type N (Varivent DN40/125)	61
DN38 ISO 2852 / TriClamp 1 1/2", 3A with cooling neck	81
DN51 ISO 2852 Clamp. 3A with cooling neck	84
Wetted parts material	
Stainless steel 1.4404 / AISI 316L	2
Hastelloy C	H
Seal	
Without (to be ordered separately)	0
Oil filling	
Standard oil	1
NSF H1 listed oil (FDA approved)	2
Display	
Without display	1
With display No relays activated	2
With display With activated relays	4
ATEX	
Without	0
Ex nA II T5 (Gas)	3
Ex ia IIC T5 Ga or Ex ia IIIC T100°C Da (Gas or Dust)	5
Approvals	
Without	0
Configuration	
No configuration (configured according to pressure cell)	0
Configuration of Range	1
Configuration of Range + Display	2

If the product wanted is not available from above list please inquire.

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