



### 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



### 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 repeatability)	<±0.1% FS / <±0.25% FS
Process temperature range	Silicon oil -40 ... 125 °C (<150 °C <60 min) White oil -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	$R_L = (U_{supply} - 10 V) / 20 mA$
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

### ATEX ia Gas / Dust

Approval	Gas Zone 0/1 Dust Zone 20/21	II 1 G, Ex ia IIC T5 Ga 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	$U_i$	< 30 VDC
	$I_i$	< 0.1 A
	$P_i$	< 0.75 W

### ATEX nA Gas

Approval	Gas Zone 2	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	$R_a \leq 0.4 \mu m$
DN51 ISO 2852 / DIN 32676 Clamp	$R_a \leq 0.4 \mu m$
DN38 Hygienic connection	$R_a \leq 0.8 \mu m$
DN76 Hygienic connection	$R_a \leq 0.8 \mu m$
GEA Tuchenhagen Varivent® ball housing	$R_a \leq 0.8 \mu m$
Weld joint	$R_a \leq 0.8 \mu m$
Diaphragm	$R_a \leq 0.4 \mu m$

### 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 ordered separately See table page 3

### Approvals

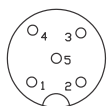
Apply to	EMC directive 2004/108/CE in accordance with EN61000-6-2, EN 61000-6-3 Pressure directive 97/23/CE FDA
Certificates	3A EHEDG (pending)

### 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

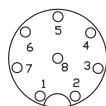
### Electrical connections

#### M12, 5-wire

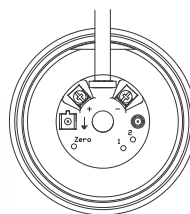


- 1 + supply, 4...20 mA
- 2 Common for relays
- 3 - supply, 4...20 mA
- 4 Relay 1
- 5 Relay 2

#### 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.



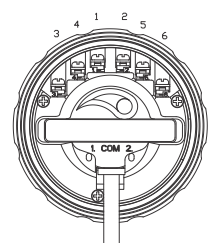
#### Cable gland

##### Transmitter

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

##### Display

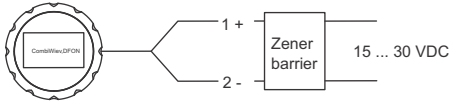
- 1 N.C.
- 2 N.C.
- 3 Relay 1
- 4 Relay 1
- 5 Relay 2
- 6 Relay 2
- Com 1 Red clip (FlexProgrammer)
- Com 2 Black clip (FlexProgrammer)



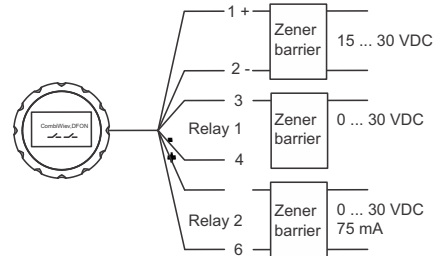
Disposal of product and packing.  
According to national laws or by returning t

## ATEX ia Gas/Dust

### PFMx without relay output

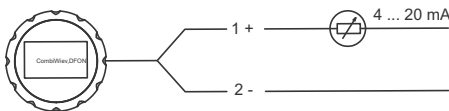


### PFMx with relay output

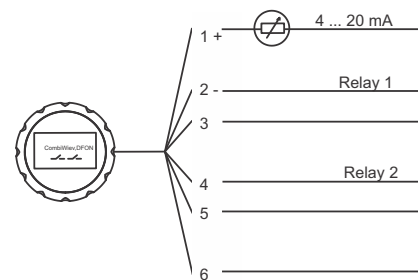


## ATEX nA Gas

### PFMx without relay output

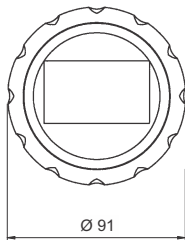


### PFMx with relay output

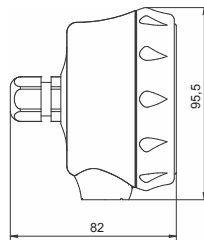


## Dimensions (mm)

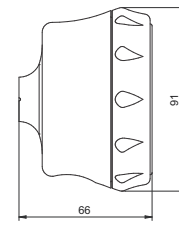
Front view



Bottom connection

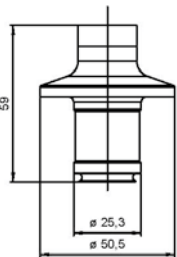


Rear connection

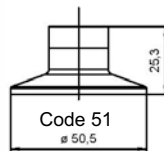


## Process connections dimensions (mm)

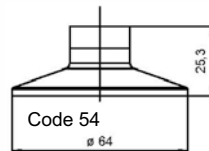
3A DN 38  
Code 50



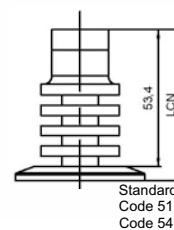
ISO 2852 DN 38  
Code 51



2852 DN 51  
Code 54



Cooling neck  
high temperature



Standard  
Code 51  
Code 54

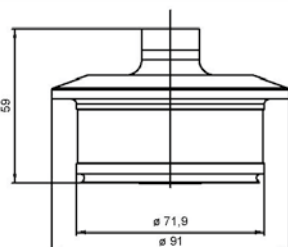
High temp.  
Code 81  
Code 84

LCN:  
51 mm  
51 mm

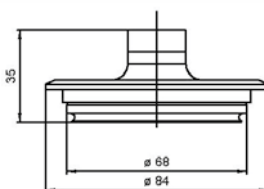
High temp.  
Code 81  
Code 84

LCN:  
51 mm  
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.

