

PF75H (compact, two electrical connections)

Electromagnetic flow meter for hygienic applications

PF75H-5#####8#03D1##2112#110#0, PF75H-5#####B#03D1##2112#110#0, PF75H-5#####D#03D1##2112#110#0

Overview

- Volume and velocity measurement in one sensor
- Especially precise and stable measurements with accuracies to 0.2%
- For media with conductivity > 5 µS/cm in closed systems
- Measurement range 0 ... 280 m³/h with tube diameter DN 3 ... 100
- Hygienic design with 3-A and FDA conformity
- No energy loss thanks to continuous measuring tube without constriction
- Graphic display CombiView DFON optionally available and programmable via touch screen or BCP software



Picture similar



Technical data

Performance characteristics

Measuring principle	Electromagnetic flow measurement
Nominal diameter range	DN 3 ... DN 100
Max. flow velocity	10 m/s
Max. measuring error	± 0.5 % o. r. ± 0.2 % o. r. , optional
Max. turndown ratio	1 : 1000
Measuring range, flow	0 ... 10 m/s 0 ... 288 m³/h
Media characteristics	≥ 5 µS/cm
Step response time	≤ 400 ms
Sampling interval	≤ 200 ms
Min. measuring span	0 ... 10.3 l/h
Damping	0.2 ... 1000 s
Repeatability	≤ 0.1 % o. r.

Process conditions

Process temperature	-20 ... 100 °C
Process pressure	-1 ... 16 bar
SIP/CIP compatibility	< 30 min, in general @ medium temperature up to 130 °C

Process connection

Sensor tube material	AISI 304 (1.4301)
Wetted parts material, process connection	AISI 316L (1.4404)
Wetted parts material, liner	PTFE
Wetted parts material, electrodes	AISI 316L (1.4404)
Wetted parts material, gasket	FKM

Process connection

Connection variants	ISO 2852 (Tri-Clamp) / DIN 32676-B BS 4825-3 (ASME BPE) / DIN 32676-C SMS 1145 male thread, COP DIN 11851 (dairy pipe connection) DIN EN 10357 series A (DIN 11850-2), weldable pipe end In order to maintain compliance with 3-A Sanitary Standards for DIN 11851 these connections must be fitted with a special gasket from either SKS Komponenten System (SKS) B.V. or Asepto Star k-flex gasket from Kieselmann GmbH.
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Surface roughness (in contact with medium)

Process connection	Ra ≤ 0.8 µm Ra ≤ 0.4 µm, optional
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Ambient conditions

Operating temperature range	-20 ... 80 °C , with DFON touch screen -20 ... 85 °C , without DFON touch screen
Storage temperature range	-20 ... 60 °C
Altitude	-200 ... 4000 m
Degree of protection (EN 60529)	IP 65 IP 67
Humidity	0 ... 100 %
Insulation resistance	> 100 MΩ
Insulation voltage	500 V DC

Output signal

Digital output signal	1 x pulse / frequency / alarm 2 x pulse / frequency / alarm (optional)
Analog output (optional)	0...20 mA 4...20 mA
Voltage drop	1.2 V DC

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Technical data

Output signal

Relays	2 relays included in the display
Load resistance	≤ 500 Ω, Vs = 18 V DC ≤ 1000 Ω, Vs = 30 V DC
Short circuit protection	Yes
Reverse polarity protection	Yes
Damping	0.2 ... 1000 s
Interface (optional)	Hart

Housing

Style	FlexHousing, Ø80 mm Bottom process connection
Overall size	Refer to section "Dimensional drawings"
Material	AISI 304 (1.4301)

Electrical connection

Connector	M12-A, 5-pin, stainless steel M12-A, 8-pin, stainless steel
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Electrical connection

Cable gland	M16x1.5, plastic M16x1.5, stainless steel M20x1.5, plastic M20x1.5, stainless steel
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Power supply

Voltage supply range	18 ... 30 V DC
Power consumption	≤ 5 W
Power-up time	≤ 30 s , standard use ≤ 15 min , warm-up for calibration
Reverse polarity protection	Yes

Compliance and approvals

EMC	IEC 61326-1 EN 61326-1
Hygiene	3-A (28-06)

Operating conditions

Nominal diameter	Min. measuring span		Max. measuring span	
	DN3	0 ... 10.3 l/h	0 ... 2.7 gal/h	0 ... 259 l/h
DN6	0 ... 41.4 l/h	0 ... 10.9 gal/h	0 ... 1037 l/h	0 ... 274 gal/h
DN10	0 ... 115.2 l/h	0 ... 30.4 gal/h	0 ... 2880 l/h	0 ... 761 gal/h
DN15	0 ... 259.2 l/h	0 ... 68.5 gal/h	0 ... 6480 l/h	0 ... 1712 gal/h
DN20	0 ... 460.8 l/h	0 ... 121.7 gal/h	0 ... 11520 l/h	0 ... 3043 gal/h
DN25	0 ... 0.7 m ³ /h	0 ... 184.9 gal/h	0 ... 18 m ³ /h	0 ... 4755 gal/h
DN32	0 ... 1.2 m ³ /h	0 ... 317 gal/h	0 ... 29 m ³ /h	0 ... 7661 gal/h
DN40	0 ... 1.9 m ³ /h	0 ... 501.9 gal/h	0 ... 46 m ³ /h	0 ... 12152 gal/h
DN50	0 ... 2.9 m ³ /h	0 ... 766.1 gal/h	0 ... 72 m ³ /h	0 ... 19020 gal/h
DN65	0 ... 4.9 m ³ /h	0 ... 1294.4 gal/h	0 ... 122 m ³ /h	0 ... 32229 gal/h
DN80	0 ... 7.5 m ³ /h	0 ... 1981.3 gal/h	0 ... 184 m ³ /h	0 ... 48608 gal/h
DN100	0 ... 11.7 m ³ /h	0 ... 3090.8 gal/h	0 ... 288 m ³ /h	0 ... 76082 gal/h

Note: gal is defined as US liq. gal.

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Display

General information

Panel type	FSTN Graphical LCD
Display range	-9999 ... 99999
Max. digit height	22 mm
Material	Polycarbonate

Ambient conditions

Optimal readability temperature range	-10 ... 70 °C
Operating temperature range	-20 ... 80 °C

Input signal

Input signal from transmitter	Digital, 2-way for communication between transmitter and display
Update time	≤ 1 s , max. 0.3 s , typ.

User configurable data

Error- / Warning-indication	Individually configurable display and backlight indication in white, green or red colour, steady or flashing light. Configurable limits over the range
Measuring unit	<ul style="list-style-type: none"> µS/cm mS/cm % °C °F m³/h m/s l/h cm/s Hz kHz
User defined measuring unit	8 × 20 pixel matrix

Relays

Contacts	2 x solid state relays
Max. load current	75 mA
Max. switching voltage	60 V

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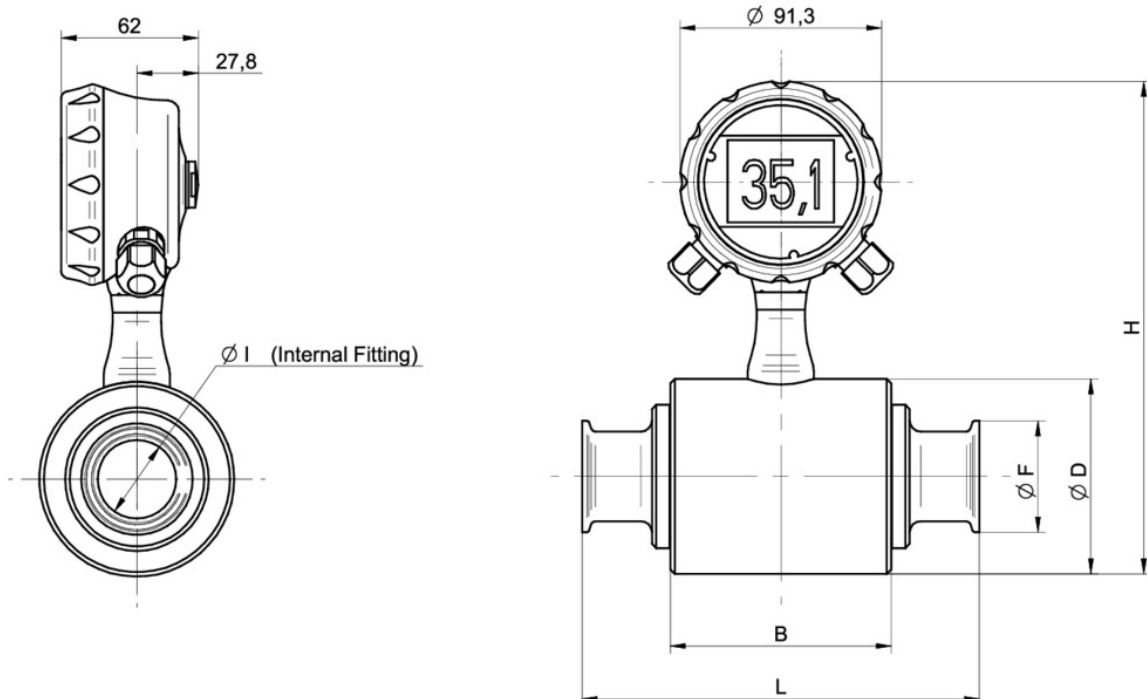
Electromagnetic flow meter for hygienic applications

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Dimensional drawings (mm)

Nominal diameter	Process connection	I	F	D	H	B	L
DN3	ISO 2852 (Tri-Clamp)	12.7 mm	34 mm	76 mm	211 mm	77 mm	128 mm
DN6	ISO 2852 (Tri-Clamp)	12.7 mm	34 mm	76 mm	211 mm	77 mm	128 mm
DN10	ISO 2852 (Tri-Clamp)	12.7 mm	34 mm	76 mm	211 mm	77 mm	128 mm
DN15	ISO 2852 (Tri-Clamp)	17.2 mm	34 mm	76 mm	211 mm	77 mm	128 mm
DN20	ISO 2852 (Tri-Clamp)	21.3 mm	34 mm	76 mm	211 mm	77 mm	128 mm
DN25	ISO 2852 (Tri-Clamp)	22.6 mm	51 mm	89 mm	224 mm	100 mm	180 mm
DN40	ISO 2852 (Tri-Clamp)	35.6 mm	51 mm	108 mm	243 mm	100 mm	180 mm
DN50	ISO 2852 (Tri-Clamp)	48.6 mm	64 mm	129 mm	264 mm	100 mm	180 mm
DN65	ISO 2852 (Tri-Clamp)	60.3 mm	76 mm	140 mm	275 mm	100 mm	180 mm
DN80	ISO 2852 (Tri-Clamp)	72.9 mm	91 mm	156 mm	291 mm	100 mm	200 mm
DN100	ISO 2852 (Tri-Clamp)	97.6 mm	119 mm	168 mm	303 mm	100 mm	200 mm

Nominal diameter	Process connection	I	F	D	H	B	L
DN3	BS 4825-3	9.5 mm	25 mm	76 mm	211 mm	77 mm	128 mm
DN6	BS 4825-3	9.5 mm	25 mm	76 mm	211 mm	77 mm	128 mm
DN10	BS 4825-3	9.5 mm	25 mm	76 mm	211 mm	77 mm	128 mm
DN15	BS 4825-3	15.85 mm	25 mm	76 mm	211 mm	77 mm	128 mm
DN20	BS 4825-3	22.2 mm	51 mm	76 mm	211 mm	77 mm	128 mm
DN25	BS 4825-3	22.2 mm	51 mm	89 mm	211 mm	100 mm	180 mm
DN40	BS 4825-3	34.9 mm	51 mm	106 mm	224 mm	100 mm	180 mm
DN50	BS 4825-3	47.6 mm	64 mm	129 mm	249 mm	100 mm	180 mm
DN65	BS 4825-3	60.3 mm	76 mm	140 mm	275 mm	100 mm	180 mm
DN80	BS 4825-3	73.0 mm	91 mm	156 mm	275 mm	100 mm	200 mm
DN100	BS 4825-3	97.6 mm	119 mm	168 mm	303 mm	100 mm	200 mm



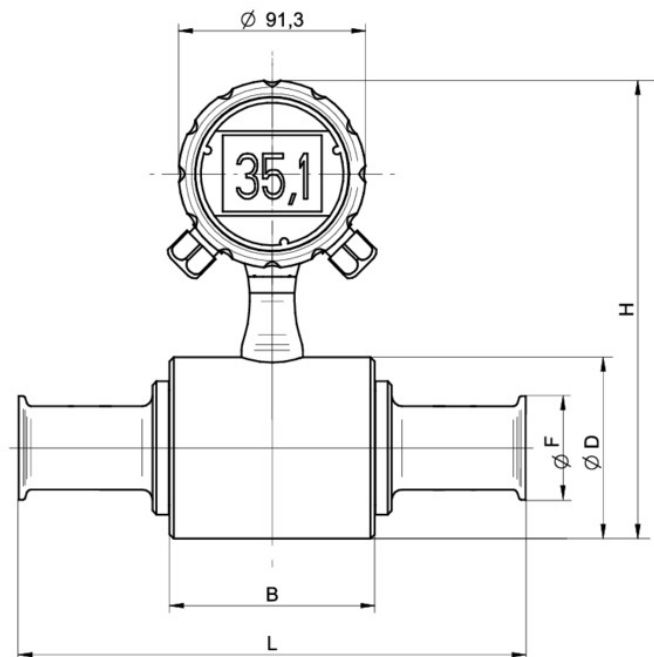
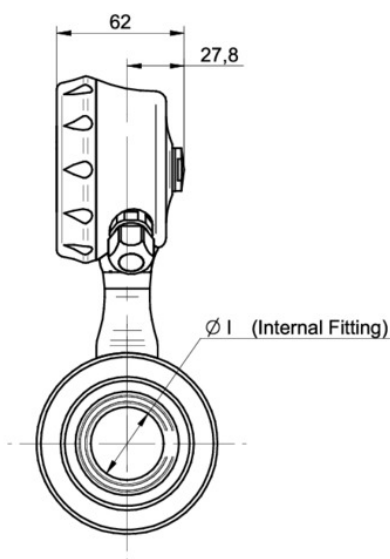
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Dimensional drawings (mm)

Nominal diameter	Process connection	I	F	D	H	B	L
DN25	ISO 2852 (Tri-Clamp)	22.6 mm	51 mm	89 mm	224 mm	100 mm	250 mm
DN40	ISO 2852 (Tri-Clamp)	35.6 mm	51 mm	108 mm	243 mm	100 mm	250 mm
DN50	ISO 2852 (Tri-Clamp)	48.6 mm	64 mm	129 mm	264 mm	100 mm	250 mm
DN65	ISO 2852 (Tri-Clamp)	60.3 mm	76 mm	140 mm	275 mm	100 mm	250 mm
DN80	ISO 2852 (Tri-Clamp)	72.9 mm	91 mm	156 mm	291 mm	100 mm	250 mm
DN100	ISO 2852 (Tri-Clamp)	97.6 mm	119 mm	168 mm	303 mm	100 mm	250 mm



Nominal diameter	Process connection	Fitting	E	D	H	B	L
DN3	DIN 11851 (dairy pipe connection)	DN10	10 mm	76 mm	211 mm	77 mm	128 mm
DN6	DIN 11851 (dairy pipe connection)	DN10	10 mm	76 mm	211 mm	77 mm	128 mm
DN10	DIN 11851 (dairy pipe connection)	DN10	10 mm	76 mm	211 mm	77 mm	128 mm
DN15	DIN 11851 (dairy pipe connection)	DN15	16 mm	76 mm	211 mm	77 mm	128 mm
DN20	DIN 11851 (dairy pipe connection)	DN20	20 mm	76 mm	211 mm	77 mm	128 mm
DN25	DIN 11851 (dairy pipe connection)	DN25	26 mm	89 mm	211 mm	100 mm	180 mm
DN32	DIN 11851 (dairy pipe connection)	DN32	32 mm	89 mm	224 mm	100 mm	180 mm
DN40	DIN 11851 (dairy pipe connection)	DN40	38 mm	106 mm	224 mm	100 mm	180 mm
DN50	DIN 11851 (dairy pipe connection)	DN50	50 mm	129 mm	249 mm	100 mm	180 mm
DN65	DIN 11851 (dairy pipe connection)	DN65	66 mm	140 mm	275 mm	100 mm	180 mm
DN80	DIN 11851 (dairy pipe connection)	DN80	81 mm	156 mm	275 mm	100 mm	200 mm
DN100	DIN 11851 (dairy pipe connection)	DN100	100 mm	168 mm	303 mm	100 mm	200 mm

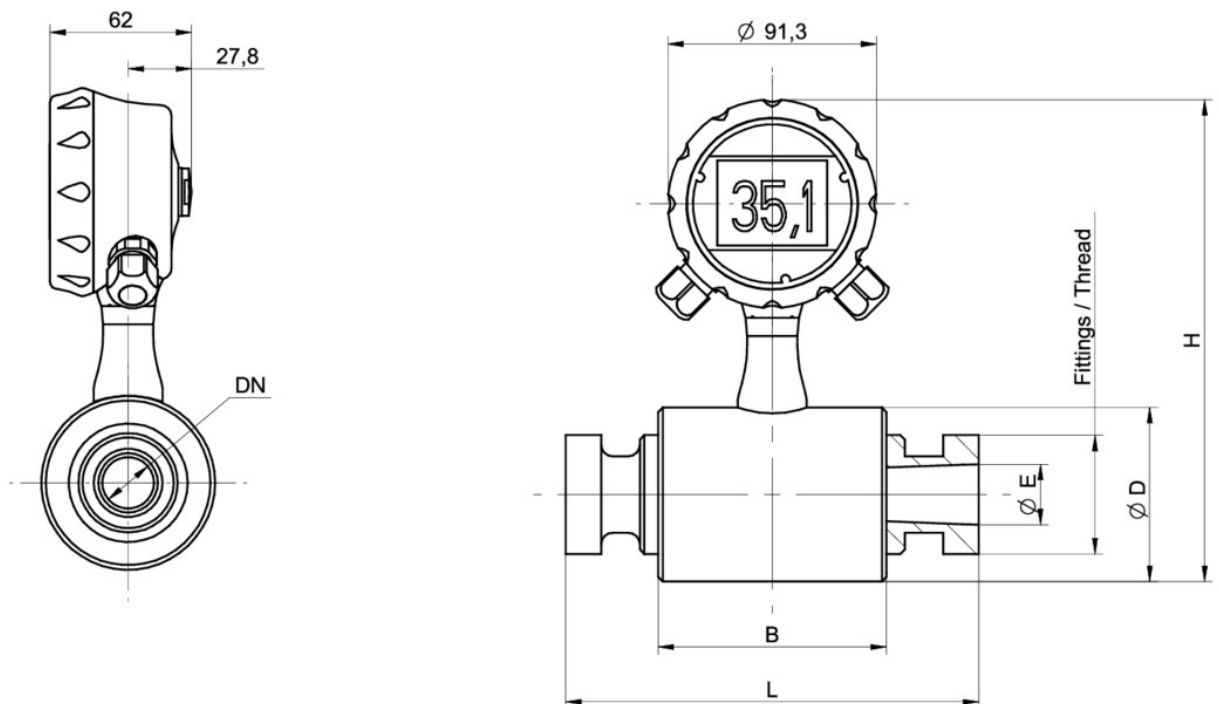
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Dimensional drawings (mm)

Nominal diameter	Process connection	Fitting	E	D	H	B	L
DN10	SMS 1145 male thread	DN25	22.6 mm	76 mm	211 mm	77 mm	128 mm
DN15	SMS 1145 male thread	DN25	22.6 mm	76 mm	211 mm	77 mm	128 mm
DN20	SMS 1145 male thread	DN25	22.6 mm	76 mm	211 mm	77 mm	128 mm
DN25	SMS 1145 male thread	DN25	22.6 mm	89 mm	211 mm	100 mm	180 mm
DN40	SMS 1145 male thread	DN38	36.8 mm	106 mm	224 mm	100 mm	180 mm
DN50	SMS 1145 male thread	DN51	49.3 mm	129 mm	249 mm	100 mm	180 mm
DN65	SMS 1145 male thread	DN63	58.3 mm	140 mm	275 mm	100 mm	180 mm
DN80	SMS 1145 male thread	DN76	70.7 mm	156 mm	275 mm	100 mm	200 mm
DN100	SMS 1145 male thread	DN104	95.7 mm	168 mm	303 mm	100 mm	200 mm



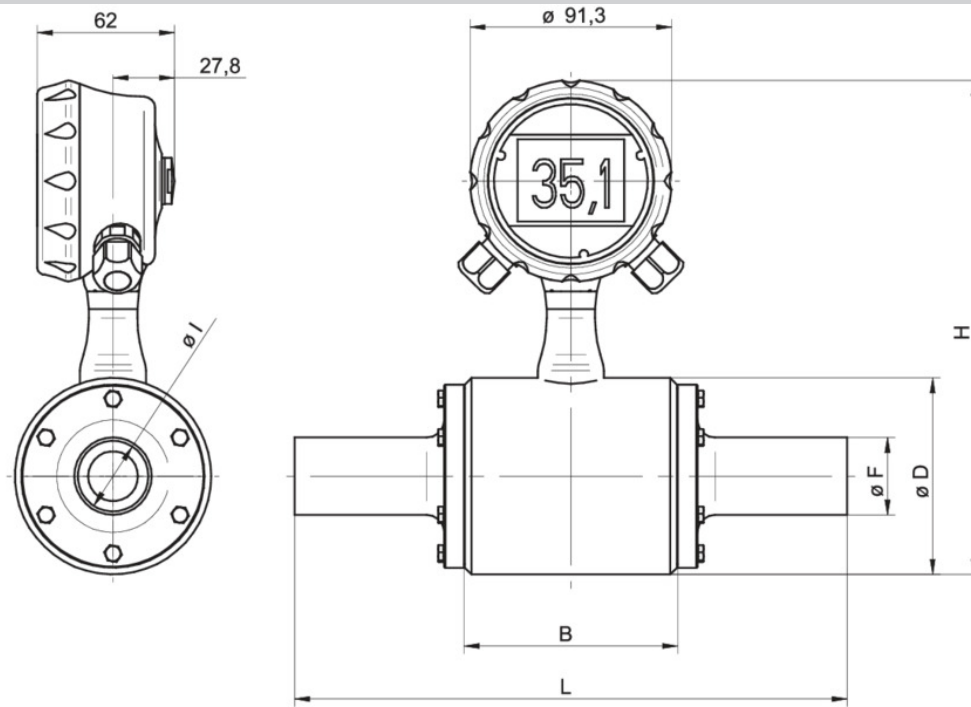
Nominal diameter	Process connection	I	F	D	H	B	L
DN25	DIN EN 10357 series A	26.0 mm	29 mm	89 mm	224 mm	100 mm	250 mm
DN32	DIN EN 10357 series A	32.0 mm	35 mm	89 mm	224 mm	100 mm	250 mm
DN40	DIN EN 10357 series A	38.0 mm	41 mm	108 mm	243 mm	100 mm	250 mm
DN50	DIN EN 10357 series A	50.0 mm	53 mm	129 mm	264 mm	100 mm	250 mm
DN65	DIN EN 10357 series A	66.0 mm	70 mm	140 mm	275 mm	100 mm	250 mm
DN80	DIN EN 10357 series A	81.0 mm	85 mm	156 mm	291 mm	100 mm	258 mm
DN100	DIN EN 10357 series A	100.0 mm	104 mm	168 mm	303 mm	100 mm	258 mm

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Dimensional drawings (mm)



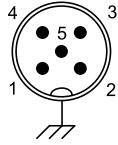
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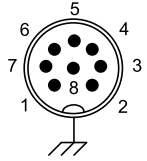
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Electrical connection

M12-A, 5-pin



M12-A, 8-pin



Left side connection (front view): M12-A, 5-pin

Function			Pin assignment
V _{DC} ⁺	Power supply +	18 ... 30 V DC	1
V _{DC} ⁻	Power supply -	18 ... 30 V DC	3
mA+	Analog output	4 ... 20 mA	2
IO-Link/SW	IO-Link/SW		4
GND	Earth		5

Right side connection (front view): M12-A, 8-pin

Function (without display)			Pin assignment
Out 1	Digital output 1	Selectable	1
Out 2	Digital output 2	Selectable	8
In +	Digital input	Selectable	2
Common Out	Input/output common +		7
		n.c.	5
		n.c.	6
		n.c.	3
		n.c.	4

Function (with display)

Function (with display)			Pin assignment
Out 1	Digital output 1	Selectable	1
Out 2	Digital output 2	Selectable	8
In +	Digital input	Selectable	2
Common Out	Input/output common +		7
R11	Relay 1		5
R12	Relay 1		6
R21	Relay 2		3
R22	Relay 2		4

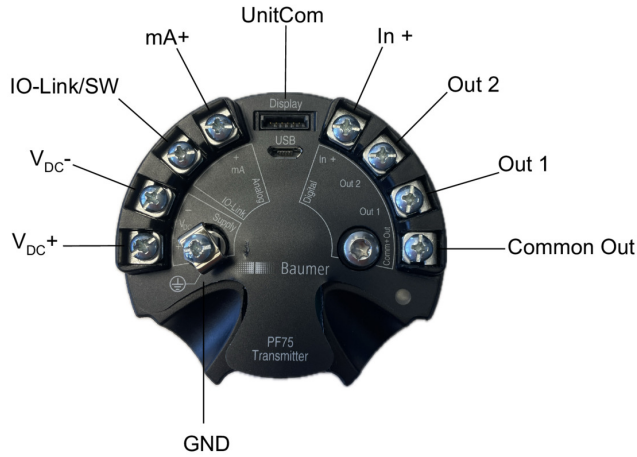
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Electrical connection

Terminal assignment transmitter



Terminal assignment DFON display



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Ordering information

Ordering key - Configuration possibilities see website

	PF75H	-	5	#	#	#	#	#	#	#	0	3	D	1	#	#	2	1	1	2	#	1	1	0	#	0
Product	PF75H																									
Housing																										
Stainless steel 1.4301 / AISI304			5																							
Bottom connection																										
Max. measurement error																										
±0.5 % o.r																										
±0.2 % o.r																										
Display																										
Without display																										
With display, with activated relays																										
Output signal analog																										
Without																										
4 ... 20 mA																										
Output signal digital																										
1 x Active pulse / frequency output (programmable)																										
2 x Active pulse / frequency output (programmable)																										
Interface																										
Without																										
HART®																										
Electrical connection																										
2 x M16x1.5 cable gland																										
2 x M20x1.5 cable gland																										
1 x M12-A, 5-pin + 1 x M12-A, 8-pin																										
Material of el. connection																										
Plastic																										
Stainless steel, AISI 304 (1.4301)																										
Converter version																										
Compact																										
Protection class																										
IP65, IP67																										
Process temperature (conti.)																										
-20 ... 100 °C																										
Max. process pressure																										
PN16																										
Nominal diameter																										
DN3																										
DN6																										
DN10																										
DN15																										
DN20																										
DN25																										
DN32																										
DN40																										
DN50																										
DN65																										
DN80																										
DN100																										

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Ordering information

Ordering key - Configuration possibilities see website

	PF75H	-	5	#	#	#	#	#	#	0	3	D	1	#	#	2	1	1	2	#	1	1	0	#	0			
Process connection																												
DIN 11851 (dairy pipe connection)																											3	
ISO 2852 (Tri-Clamp)																												4
BS 4825-3																												5
SMS 1145 male thread																												6
DIN EN 10357 series A (DIN 11850-2), weldable pipe end																												7
Sensor body and process connec																												
AISI 316L																												2
Liner material																												
PTFE																												1
Electrodes material																												
AISI 316L																												1
Number of electrodes																												
Two electrodes																												2
Surface finish																												
Ra ≤ 0,8 µm																												A
Ra ≤ 0,4 µm																												C
Sealing-/ O-ring material (int																												
FKM																												1
Special approvals																												
3-A																												1
Measuring Instr. Directive																												
Without																												0
Calibration certificate																												
2 point calibration certificate (standard)																												0
3 point calibration certificate																												1
5 point calibration certificate																												2
10 point calibration certificate																												3
Configuration / Parametrizatio																												
Factory settings																												0

(1) The process connection DIN 11851 must be equipped with a special seal either from SKS Komponenten System (SKS) B.V. or Asepto Star k-flex seal from Kieslemann GmbH in order to be hygienic

(2) SMS 1145 can only be used for COP (Cleaning out of place)