Type:
Flowcont UN

Ultrasonic flowmeter Flowcont UN
Non-contact flow measurement

Product description

The non-contact, ultrasonic flow sensor Flowcont UN detects the flow volumes of conductive and non-conductive liquids.
Swimming against the current requires more strength than with the current – this is the simple fact on which ultrasonic flow measurement according to the phase difference process is based.
The device has a compact design, and its wide range of possible applications means it can also be used in restricted spaces.

The seal-free sensor design, with high-quality polysulfone (Ultrason S) combined with enclosure rating IP 67, not only makes it possible to use the device in harsh ambient conditions, but also guarantees high process reliability. The large text display also helps ensure simple, fast and problem-free commissioning.

At a glance

- Flow sensor for conductive and nonconductive liquids
- No moving parts, compact design
- Process temperature up to 80 °C, process pressure up to 10 bar
- High chemical resistance thanks to seal-free sensor design
- Large display with membrane keyboard
- Integrated teaching tube detection
- Easy-to-clean, hygienic variants available (EHEDG certification and conformance with FDA), CIP capable

Your benefits

- *Maintenance-free* flow sensor; saves maintenance costs
- Adjustable measuring ranges, reduced number of variants
- Can be used *for conductive and nonconductive liquids* – fewer variants and lower storage costs
- Straight measuring tube reduces pressure loss, thus *saving energy costs*
- Sensor without seals increases process reliability and availability
- *Flexible measurement system* for all industries

Specifics

Order code. . . . . page |08|

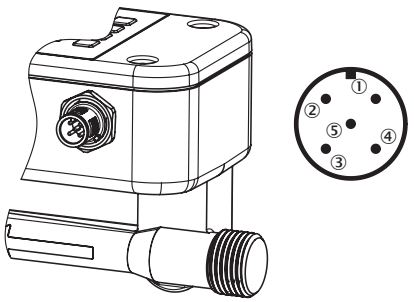
Detailed technical data

Features				
Measuring principle	Ultrasonic sensor			
Medium	Fluids			
Nominal width measuring tube	NW 10 / NW 15 / NW 20 / NW 25			
Process temperature	0 °C ... +80 °C			
Process pressure	NW 10 und NW 15: Max. 10 bar / NW 20 und NW 25: Max. 6 bar			
EHEDG approval	yes			
Performance				
Minimum flow	NW10: 0.3 l/min	NW15: 0.9 l/min	NW20: 3.5 l/min	NW25: 5 l/min
Maximum flow	NW10: 21 l/min	NW15: 36 l/min 6	NW20: 0 l/min	NW25: 240 l/min
Inlet zone	NW10: 10 cm	NW15: 30 cm	NW20: 50 cm	NW25: 80 cm
Outlet zone	NW10: 0 cm	NW15: 5 cm	NW20: 10 cm	NW25: 20 cm
Conductivity	No limitation			
Accuracy	2 % (of final value)			
Reproducibility	0.5 %			
Resolution	NW 10:0.003 l/min; NW 15: 0.006 l/min; NW 20: 0.012 l/min; NW 25:0.03 l/min			
Mechanics				
Process connection:	NW 10 NW 15 NW 20 NW 25	G $^{1}/_{2}$ G $^{3}/_{4}$ G 1 G 1 $^{1}/_{4}$	$^{1}/_{2}$“ NPT $^{3}/_{4}$“ NPT 1“ NPT 1 $^{1}/_{4}$ “ NPT	Clamp 11864 Clamp 11864 Clamp 11864 Clamp 11864
Wetted parts	PSU			
Housing material	PSU			
Weight	NW10: 340 g; NW15: 350 g, NW20: 420 g; NW25: 460 g			
Electronics				
Supply voltage [1]	18 V DC ... 30 V DC			
Ripple [2]	≤ 5 Vpp			
Power consumption [3]	≤ 180 mA			
Initialization time	≤ 5 s			
Protection class	III			
Electrical connection	M12x1, 5-pin / M12x1, 8-pin (depending on type)			
Electronics	see order code			
Impuls/frequency output	0 kHz ... 10 kHz			
Signal voltage	HIGH: Vs - 2 V, LOW: ≤ 2 V			
Output current	< 100 mA			
Load	1nductive: 1 H; capacitive: 100 nF			
Response time [4]	Filter off 100 ms, filter low 300 ms, filter medium 1 s, filter strong 4.2 s			
Enclosure rating	IP 67			
Output load	< 500 Ohm			
Signal level	Lower: 3.8 mA ... 4 mA; upper 20 mA ... 20.5 mA			
Ambient data				
Ambient temperature	operation 0 °C ... +60 °C; storage –20 °C ... +70 °C			

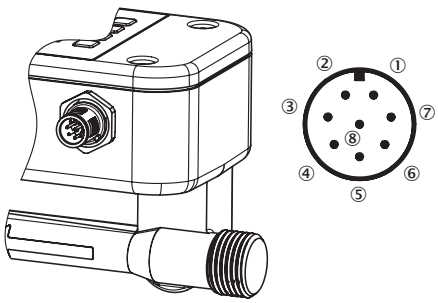
[1] All connections are polarity protected. All outputs are overload and short-circuit protected. [2] May not exceed or fall short of VS tolerances.

[3] Without load. [4] Analog output and display.

Connection type and diagram



① L^+: Supply voltage
② Q_1: Digital output PNP/NPN
③ M: Ground
④ C: Communication
⑤ Q_A: Analog current output



① L^+: Supply voltage
② Q_1: Digital output PNP/NPN
③ M: Ground
④ Q_2: Digital output PNP/NPN
⑤ Q_A: Analog current output
⑥ C: Communication
⑦ IN_1: Digital input
⑧ No function

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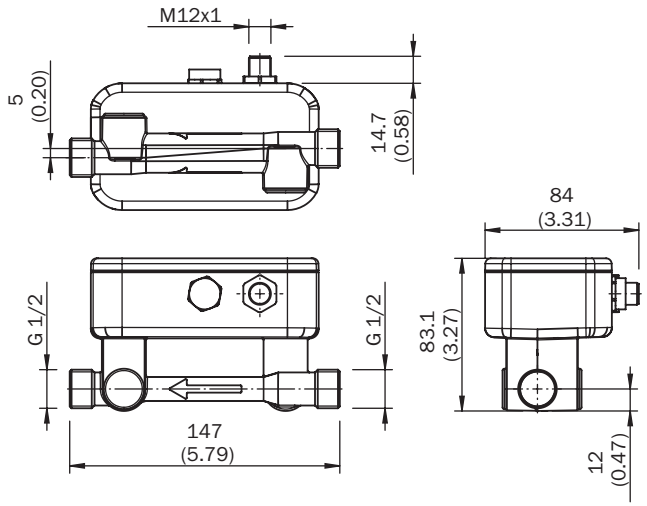
Dimensional drawings

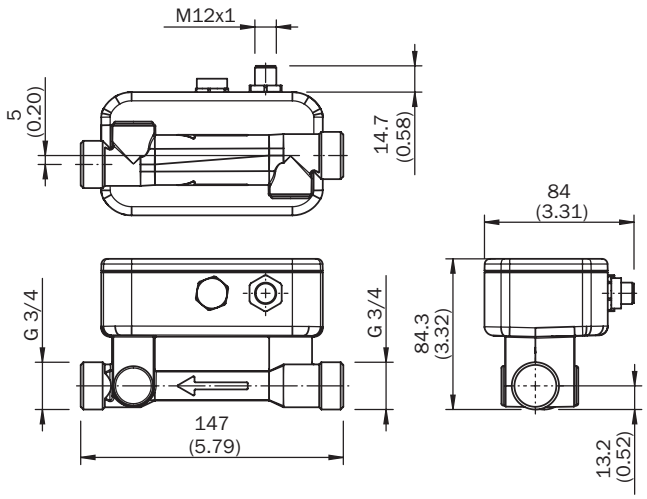
Type:
Flowcont UN

NW 10, process connection G 1/2



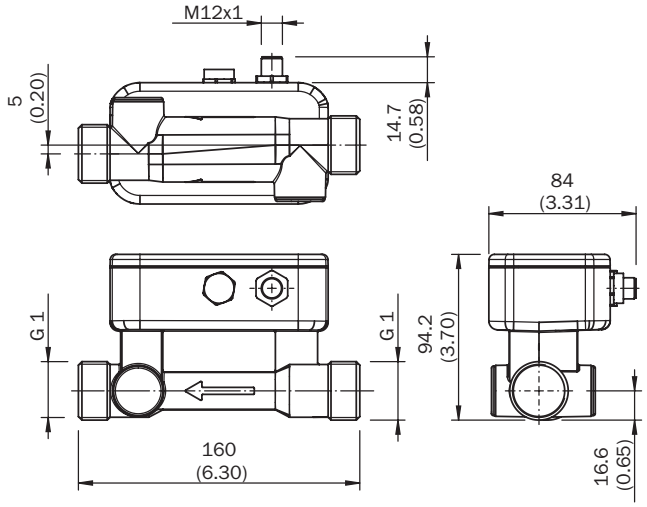
All dimensions in mm (inch)

NW 15, process connection G 3/4



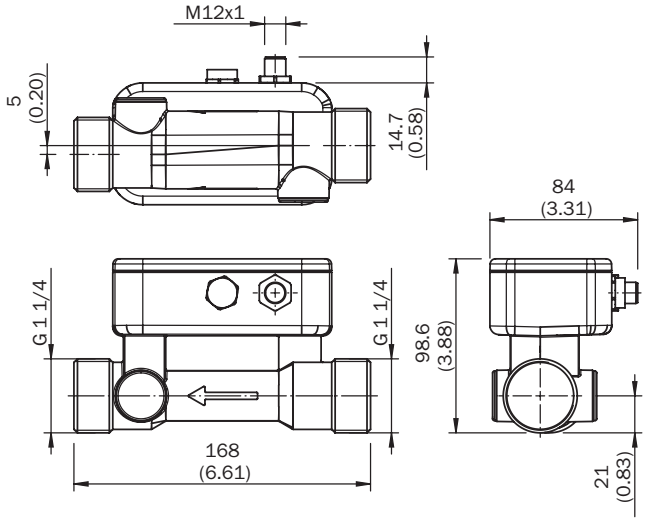
All dimensions in mm (inch)

NW 20, process connection G 1



All dimensions in mm (inch)

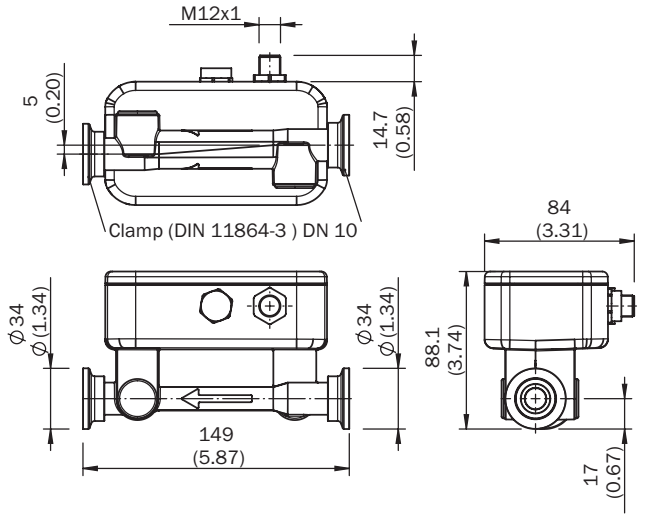
NW 25, process connection G 1 1/4



All dimensions in mm (inch)

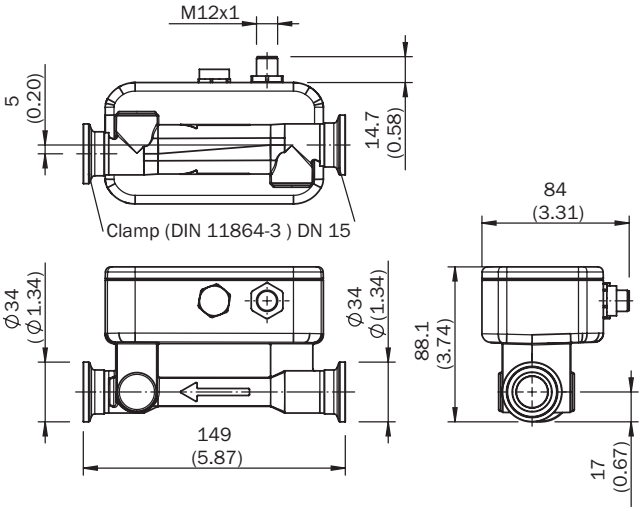
Dimensional drawings

NW 10, Clamp (DIN 11864-3)



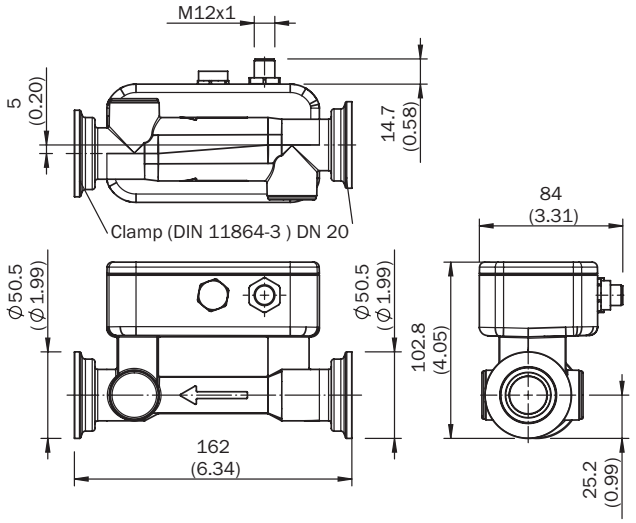
Dimensions in mm (inch)

NW 15, Clamp (DIN 11864-3)



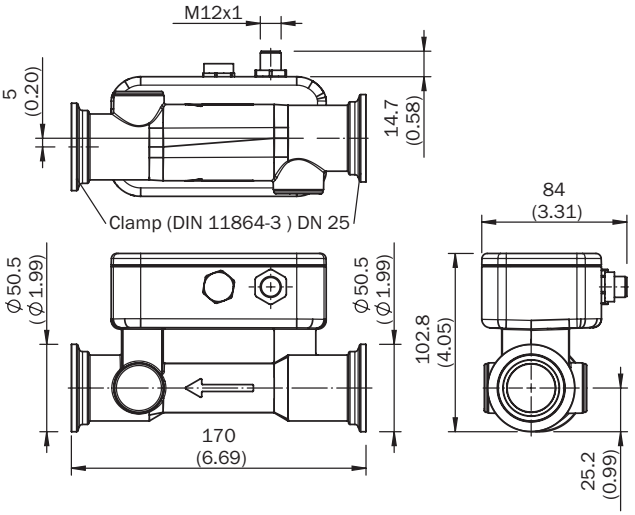
All dimensions in mm (inch)

NW 20, Clamp (DIN 11864-3)



All dimensions in mm (inch)

NW 25, Clamp (DIN 11864-3)



All dimensions in mm (inch)

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Dimensional drawings

Type:
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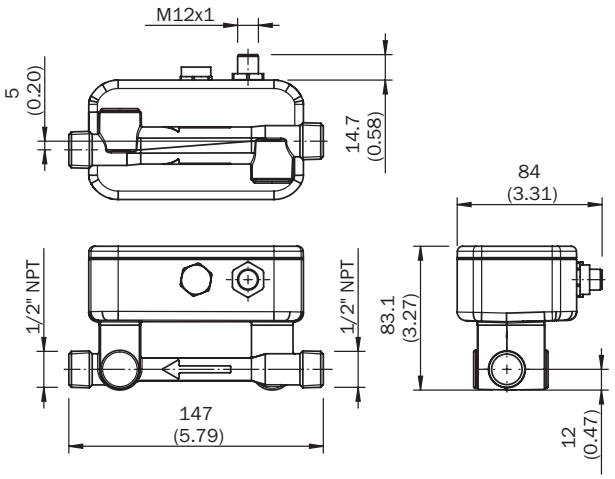
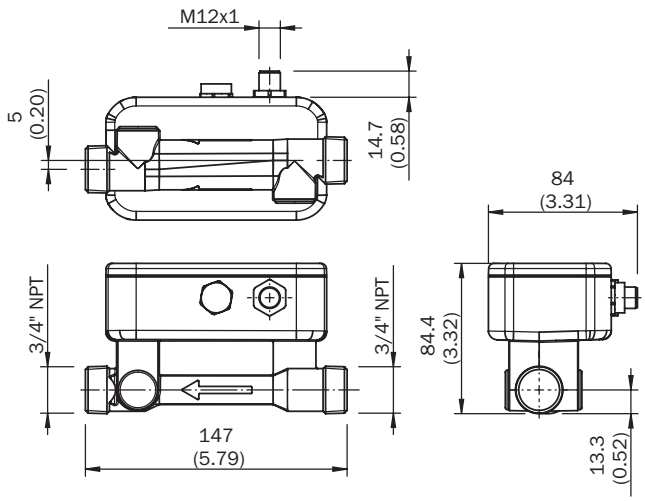
NW 10, 1/2“ NPT



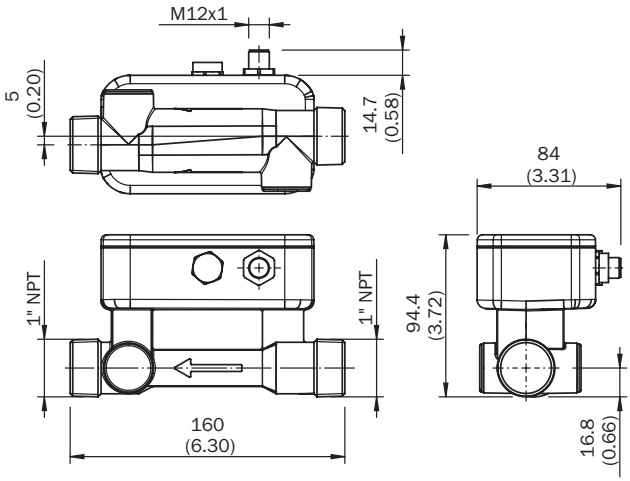
All dimensions in mm (inch)

NW 15, 3/4“ NPT



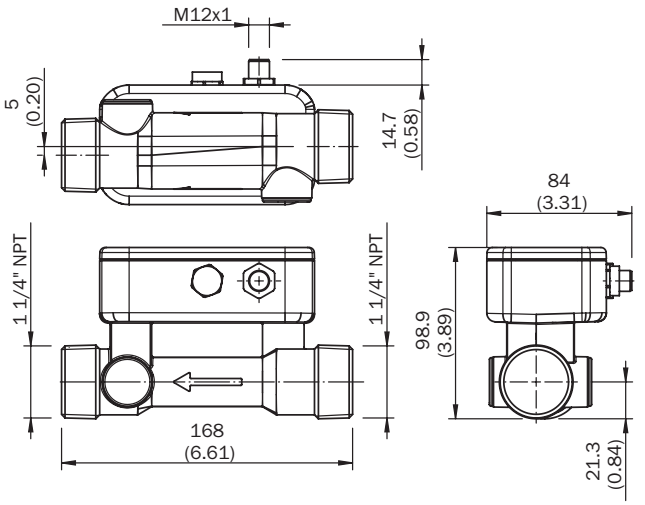
All dimensions in mm (inch)

NW 20, 1“ NPT



All dimensions in mm (inch)

NW 25, 1 1/4“ NPT



All dimensions in mm(inch)

Operation

Select parameter or chance values by using the arrow keys

Set: Save settings

Esc: Leaving current selection level / menu item

Display information:

- Current flow value in l/min
- Volume in l
- Bar graph with percentage value of current measurement range

Setting of:

- Analog output
- Pulse output
- Status output
- Measurement unit
- Creeping flow
- Medium calibration

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Tube has to be fully filled

In applications where the flowmeter is exposed to high temperatures (t ≥ 60 °C), the device should be mounted upside down:

Correct positioning

False positioning

Inlet and outlet paths

In order to receive an accurate volume measurement, it is necessary to observe inlet and outlet paths. The diameter of the tube - as given by the process connector of the FFU - should not change directly in front of the device and directly after the device. Minimum inlet and outlet paths are:

Device nominal width	1/2“	3/4“	1“	1 1/4“
Inlet path	10 cm	30 cm	50 cm	80 cm
Outlet path	0 cm	5 cm	10 cm	10 cm

Order code

construction

UN Standard ultrasonic flow meter for non-conductive liquids

Tube size

10 NW 10 Minimum flow 0,3 l/min...Maximum flow 21 l/min
15 NW 15 Minimum flow 0,9 l/min...Maximum flow 36 l/min
20 NW 20 Minimum flow 3,5 l/min...Maximum flow 60 l/min
25 NW 25 Minimum flow 5 l/min...Maximum flow 240 l/min

Sensor material

1 PSU black

Process connector

G1 Pipe thread G acc. to ISO 228 (Standard)
N1 Thread NPT
C1 Clamp (DIN11864-3) BKS form A

Elektronik

I0 Current output, 1 transmitter output, M12x1, 5-pin (Standard)
Elektronics: 1 analog output: 4 mA ... 20 mA, 0 mA ... 20 mA current flow, 1 pulse/status output: PNP-transistor output for flow rate meter, empty pipe detection, flow monitoring

SR Current output, 2 transmitter output, 1 signal input, M12x1, 8-pin
Elektronics: 1 analog output: 4 mA ... 20 mA, 0 mA ... 20 mA current flow, 2 pulse/status output: PNP-transistor output for flow rate meter, empty pipe detection, flow monitoring, 1 digital input

Bestellschlüssel

Flowcont	UN		1		

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