



The sensor series SONOFLOW CO.55 – designed as clamp-on-sensors – detect the flow rate of liquids in tubes with different diameters.

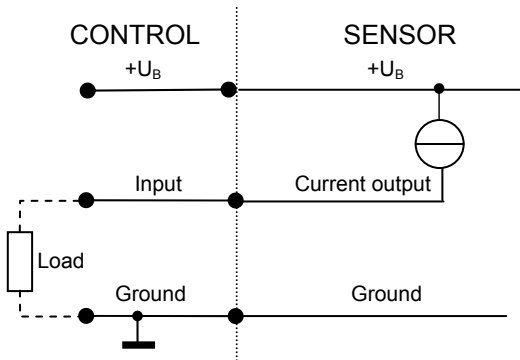
The sensors have no contact to the medium and are suitable for applications in fields with strict hygienic standards for example in the medical engineering, the analytical or dosing technology.

The SONOFLOW CO.55 can be freely suspended on the tube or can be installed fixed in machines or apparatuses.

## Technical Data

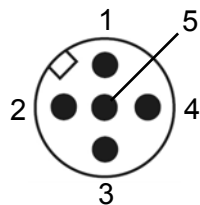
SONOFLOW CO.55			
Flow Sensor for liquids			
<b>Measuring method</b>	Ultrasound with two sections of measurements		
<b>Specification</b>	<b>CO.55/035</b>	<b>CO.55/060</b>	<b>CO.55/120</b>
<b>Order number</b>	200010225	200010224	200010223
<b>Tube (typical):</b>	The selection of the right sensor depends on the tube properties. If possible, provide us with a tube sample!		
Outer diameter	4.2 mm*	6.8 mm*	14.3 mm*
Inner diameter	3.0 mm*	4.2 mm*	9.5 mm*
<b>Measuring channel width</b>	3.5 mm	6.0 mm	12.0 mm
<b>Measuring channel height</b>	3.5 mm	6.0 mm	12.0 mm
<b>Upper range value</b>	3 000 ml/min	6 000 ml/min	12 000 ml/min
<b>Accuracy for water:</b>	At 23 °C ± 2 °C, 1 bar		
[0 ... 10 %] of full scale	± 15 ml/min	± 30 ml/min	± 60 ml/min
[10 ... 100 %] of full scale	± 5 %	± 5 %	± 5 %
<b>Zero point stability</b> measured within 2 h	± 3 ml/min	± 6 ml/min	± 12 ml/min
<b>Dimensions: L x W x H</b> (see technical drawings)	44 x 44 x 28 mm	44 x 44 x 32 mm	44 x 44 x 36 mm
<b>Weight</b> (without cable)	120 g	130 g	140 g
<b>Mounting</b>	Hanging freely from tube in any position/ Fixed installation: 4 fixing holes M4, 8 mm deep		

\* also applicable for similar diameters

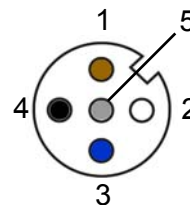
<b>Media</b>	Water or other acoustically transparent liquids	
<b>Calibration</b>	Sensors are factory calibrated for water at 23 °C ± 2 K, tube end depressurized (0 bar)	
<b>Requirements for tube</b>	<b>Parameter</b>	<b>Property</b>
	Material	PVC, silicone (tube must have a smooth exterior, not fabric)
	Elasticity	Tube must be able to adjust flexibly
<b>Sensor materials</b>	Measuring channel: PMMA black Casing: Aluminum, anodized grey/red	
<b>Operating voltage</b>	12 ... 30 VDC, maximum ripple 10 %, protection against reverse-polarity	
<b>Current consumption</b> (with open current output)	<b>Operating Voltage</b>	<b>Current intensity</b>
	12 V	70 mA
	18 V	40 mA
	24 V	35 mA
	30 V	30 mA
<b>Electrical connection</b>	5-pin M12 Connector, DIN EN 175301-803	
<b>Service interface</b>	Interface for setting parameters and recording measurements in conjunction with the SONOFLOW Monitor (USB Data Converter)	
<b>Signal output for flow rate</b>	Configuration as current output: Load to GND, max. load depends on the operating voltage (see the table)	
	<b>Operating Voltage</b>	<b>Maximum load</b>
	12 V	250 Ω
	15 V	500 Ω
	24 V	1 kΩ
	30 V	1.2 kΩ
	Configuration as pulse output: max. 22 mA, temporary short-circuit-proof (< 2 s)	
 <p>The diagram illustrates the electrical connection between the CONTROL and SENSOR sections. A vertical dashed line separates the two sections. On the CONTROL side, there are three pins: +U<sub>B</sub>, Input, and Ground. On the SENSOR side, there are three pins: +U<sub>B</sub>, Current output, and Ground. A Load is connected between the Input pin and Ground. A current source symbol is connected between the Current output pin and Ground.</p>		

<b>Ambient-/ Media temperature</b>	0 ... 60 °C, other temperatures available on request
<b>Storage temperature</b>	-20 ... +70 °C
<b>Protection type</b>	IP65
<b>Directives, standards, CE</b>	CE certification based on EMC directive 2004/108/EG
<b>Scope of delivery</b>	<ul style="list-style-type: none"> <li>SONOFLOW CO.55 according to specification</li> <li>Operating manual</li> </ul>
<b>Accessories</b>	SONOFLOW Monitor consisting of <ul style="list-style-type: none"> <li>USB Data Converter, type 006 for the connection to a computer</li> <li>Power supply unit (24 VDC)</li> <li>5-pin M12 connecting cable</li> <li>USB cable, type A-B, length 2 m</li> <li>CD with Software SONOFLOW Monitor and driver for Windows XP</li> </ul>
<b>Optional accessories</b>	<ul style="list-style-type: none"> <li>Calibration protocol</li> <li>Tube (PVC, dimensions according to specifications)</li> </ul>

## Electrical Connection



Male connector (at the sensor)



Female connector (at the cable)

M12 connecting cable	Pin	Color	Connection
<b>Assignment of the connections</b>	1	Brown	Operating voltages +12 ... 30 VDC
	2	White	Service interface (TTL-Input)
	3	Blue	Ground
	4	Black	Current output (0/4 ... 20 mA) or pulse output
	5	Grey	Service interface (TTL-Output)

Technical Drawings

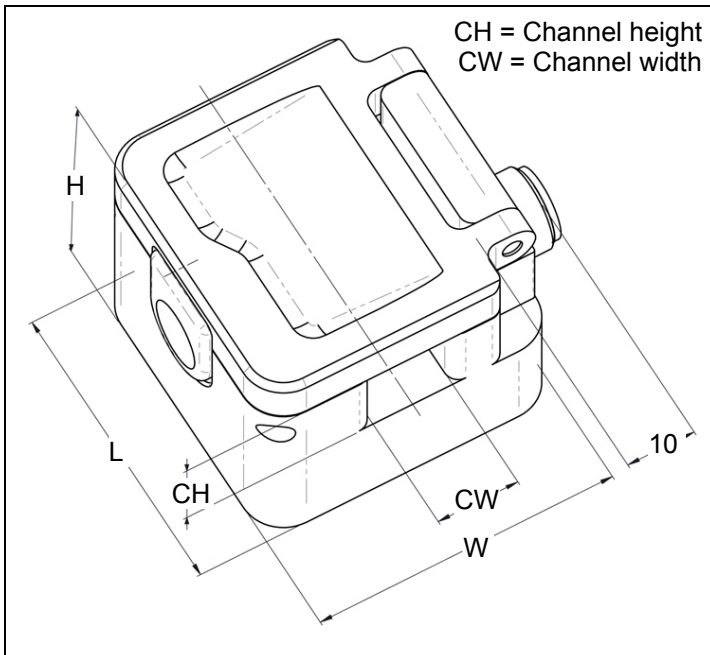


Figure 1: Dimensions SONOFLOW CO.55

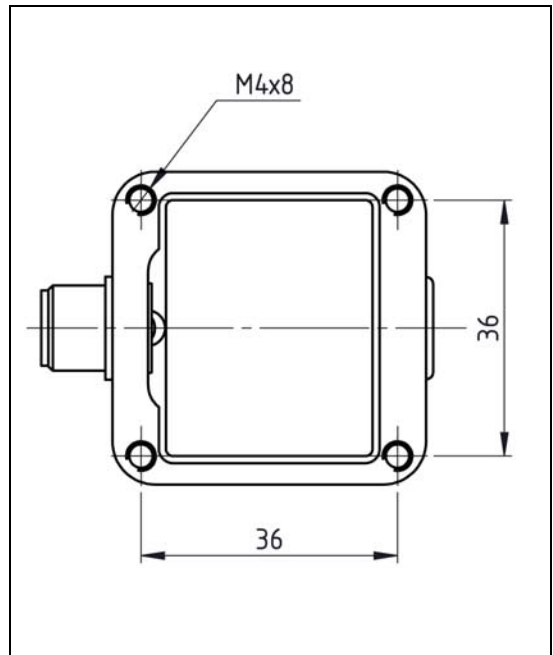


Figure 2: Rear side with drill holes for mounting

Should you have any questions, please do not hesitate to contact us.

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