



# SONOFLOW® CO.55

## Non-Contact Clamp-On Flow Meters

SONOFLOW clamp-on flow meters are designed for upstream and downstream monitoring in the bioprocess industry. The innovative sensors have integrated electronics which allow them to function without an external board or transmitter, resulting in a compact flow meter in the size of a small transducer. The ultrasonic devices ensure scale-up from process development to commercial applications in GMP environments.



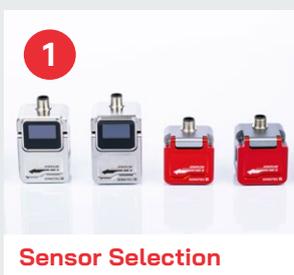
- Highly accurate measurements to improve process performance
- Reduced risk of contamination with non-contact flow sensors
- Compact flow meter for minimal equipment footprint
- Sustainable and reusable to cut down waste and costs
- No moving parts to reduce shear stress on cells
- Onsite configuration and calibration via optional C<sup>3</sup> Software

### Key Features

- Reliable flow measurement from 10 ml to 200 L / min
- Accuracy of up to 1% when adjusted for customer specific tubing / fluid
- Ideally suited for silicone, TPE, and most standard bioprocess tubing
- Real-time flow measurement
- Volume totalizing and dosing output switch for precise delivery
- Integrated electronics, no external transmitter required



### Intuitive and Easy to Handle



## Technical Data

<b>Measuring Method</b>	Transit-time ultrasound	<b>Operating Voltage</b>	12...30VDC
<b>Response time</b>	10ms or faster on request	<b>Current Consumption</b>	50mA max
<b>Channel Width</b>	3.5...34 mm	<b>Electrical Connection</b>	8-pin M12 connector
<b>Outer Diameter – Tubing</b>	4...35 mm	<b>Ambient / Media Temperature</b>	0...+60 °C
<b>Mounting</b>	Fixed installation	<b>Storage Temperature</b>	-20...+70 °C
<b>Interfaces</b>	4...20 mA, 0...20 kHz, PNP/NPN, RS-485 Modbus, digital input	<b>Protection Class</b>	IP65

## C<sup>3</sup> Software | Configure, Control, Collect

The use of the optional C<sup>3</sup> Software allows for customer specific parameterization and testing.

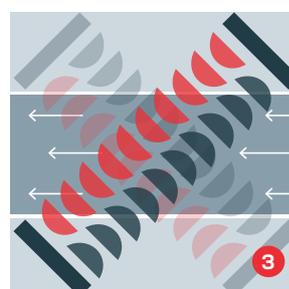
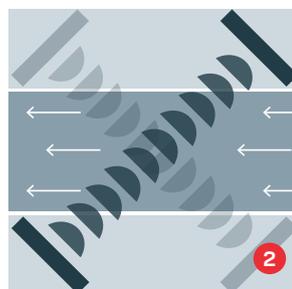
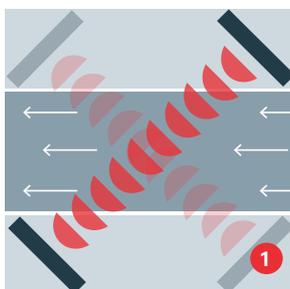
- Configure sensors for different applications
- Control sensor performance and set outputs/inputs
- Collect measurement and sensor data
- Real-time flow monitoring & volume totalizing
- Convenient onsite sensor calibration
- Connection of up to 12 sensors simultaneously



## Measurement Principle

SONOFLOW flow meters use the transit-time ultrasound method to accurately determine the flow rate. The sensor measures the time of flight of the ultrasonic wave with and against the streaming liquid. The time difference between both signals is

a measure of the velocity of the streaming liquid. Measurements are taken in picoseconds and averaged to readings of 10 ms cycle. The specific flow volume is calculated from the fluid velocity and the known area of the measurement channel.



- 1 Ultrasound waves with flow direction
- 2 Ultrasound waves against flow direction
- 3 Time difference of ultrasound waves

## Sales & Support

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Certified according to  
ISO 9001 and EN ISO 13485

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