



ISO / IEC 17025



ISO 9001/14001

Ultrasonic Flowmeter

Model: SUF



SeoJin Instech Co., Ltd.

www.seojin.biz

SUF / AceSonic

Ultrasonic Flowmeter

Principle

An ultrasonic flow meter (AceSonic) is designed to measure the flow rate of a fluid in a pipe. The sensor is a pipe-attached type and easy to install and measure. The sensor of the ultrasonic flow meter performs two functions: an ultrasonic transmitter and a receiver. The sensor is fixed to the outer wall of the pipe at a specific distance.

The sensor can be installed as a V-method in which ultrasonic waves cross the pipe twice, a W-method in which ultrasonic waves pass through the pipe four times, or a Z-method in which the sensor crosses the pipe from opposite side to the opposite side. The pipe mounting method varies depending on the characteristics of the selected pipe and the measuring fluid.

The SUF ultrasonic flow meter is a principle in which two sensors repeat transmission and reception to measure the flow velocities using the time difference between the ultrasonic propagation speeds in the fluid and convert it into flow rates.

$$T_{up} = \frac{MD / \cos \theta}{C_0 + V \sin \theta} \quad T_{down} = \frac{MD / \cos \theta}{C_0 - V \sin \theta}$$

$$V = \frac{MD}{\sin 2\theta} \times \frac{\Delta T}{T_{down} \times T_{up}}$$

M : Transfer Time

D : Internal Diameter

θ : Transmission Angle

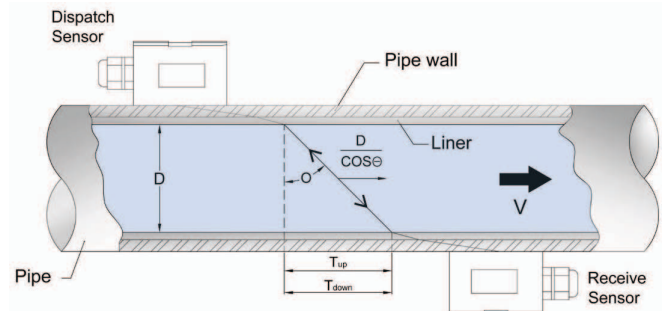
C_0 : Stationary Propagation Velocity of Fluid

T_{up} : Positive Spread Time

T_{down} : Negative Spread Time

ΔT : Time Difference for Ultrasonic Transmission

(That is, when T_{up} and T_{down} are equal, the average flow rate in the pipe is obtained.)



Features

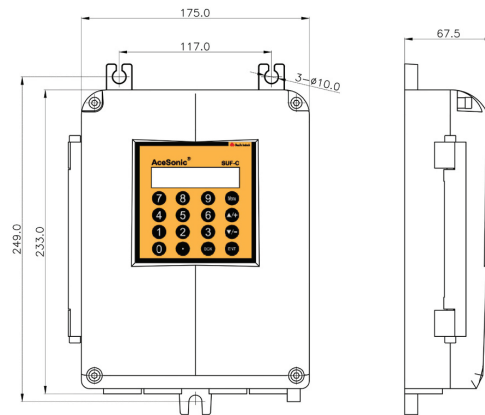
- Accuracy : $\pm 1.0\%$ (0.5m/s over)
- Temperature : Std. $-30 \sim 90\text{ }^{\circ}\text{C}$
Max. $-30 \sim 160\text{ }^{\circ}\text{C}$
- Applicable Pipe Size : DN50mm ~DN6000mm
- Principle : Ultrasonic time difference method (Transit-Time)
- Applicable Liquids : Containing a small amount of suspended matter or air bubbles.
- Language : English
- Supply Power : 90~240VAC 50/60Hz $\pm 10\%$ / 1.5W
- MAX. Range of Measurements : 10 m/s

Specifications

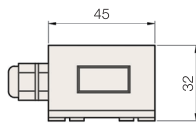
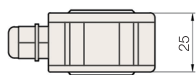
- Output
 - 4 ~ 20mA: Max. 500 ohm, Accuracy: 0.1% (From CL)
 - Pulse: width 6 ~ 1,000ms (From OCT)
 - Frequency : 1~9,999Hz (From OCT)
 - Relay output : SPST (From OCT2)
 - RS485 : MODBUS Communications
- Display : Backlight LCD displays instant flow rate, totalizer, Flow velocity and time on the standby screen.
- Material
 - Transmitter : Cast Aluminum / IP65
 - Transducer : Corrosion-resistant Plastic
 - Bracket, Scale : Stainless Steel

Dimensions

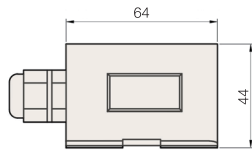
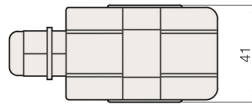
► Transmitter



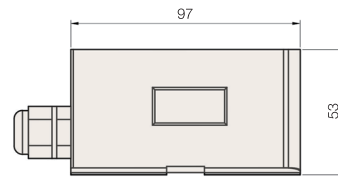
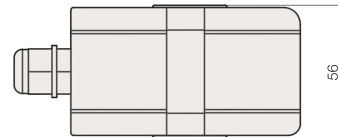
► Sensor



Small

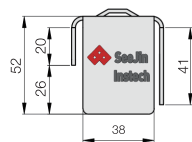
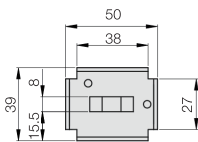


Medium

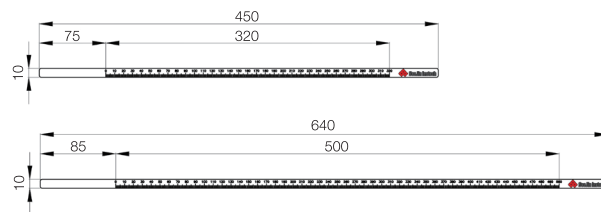


Large

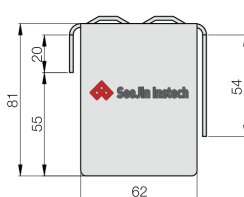
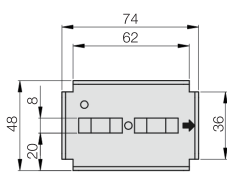
► Bracket & Scale



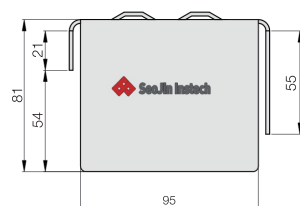
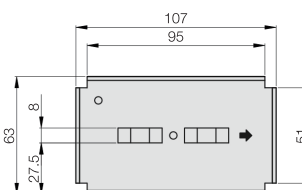
Small



※ The scale is used for V-method only.



Medium



Large

Ordering Information

■ Transmitter Part

SUF-	T	1	A	1
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OUTPUT

1 = 4 ~ 20mA / Total Pulse / RS-485 (STD.)

POWER

A = 90 ~ 240VAC 50/60Hz ±10% / 1.5W (STD.)

TYPE

1 = Wall mounted (Std.)

MODEL SELECT

T = Transmitter

■ Sensor Part

SUF-	0000	S	1	A	1	A
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MOUNTING METHOD

A = Mounted using SUS Band only (Std.)

B = SUS Band & Bracket (included Scale 320mm)

C = SUS Band & Bracket (included Scale 500mm)

CABLE LENGTH

1 = 10M (Std.)

2 = 15M

3 = 20M

4 = 30M

5 = 40M

6 = 60M

TEMPERATURE

A = -30 ~ 90°C (Std.)

B = -30 ~ 160°C (High)

SENSOR TYPE

1 = Medium Type / Applicable pipe size DN50~700mm (Std.)

2 = Small Type / Applicable pipe size DN50~100mm

3 = Large Type / Applicable pipe size DN300~6000mm

MODEL SELECT

S = Sensor part

APPLICABLE PIPE SIZE (Unit : mm)

0050~6000

■ When placing an order, selected ordering number should be indicated on the purchase order sheet.



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2024 Edition Rev.0

■ Specification subject to change without notice.