

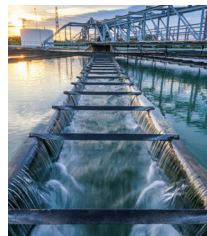
SONOPRO® Commercial Series Transit Time Flowmeter

Model U42 Clamp-On/Insertion Ultrasonic

BESTOBELL
AQUATRONIX

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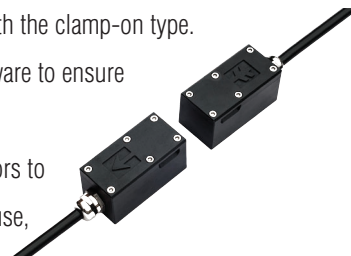
BEP-Bestobell
www.bestobell.com



The U42 ultrasonic flow meter can be used in many measurement applications, including industrial water flow, municipal water, oil, chemical, and agricultural flow.

U42 is a wall-mount, clamp-on or insertion type ultrasonic flow meter using transit time technology to accurately meter clean liquids with little to no air bubbles or particles. Clamp-on type ultrasonic flow meters are easy to install and do not require shutting down or cutting the pipe, saving you trouble and cost. Insertion type ultrasonic flow meters allow measurement of pipes that are not compatible with the clamp-on type. The SONOPRO® U42 uses our unique calculation software to ensure high accuracy and low velocity response.

U42 has the option of adding RTD temperature sensors to become an energy meter for the monitoring of energy use, helping you save energy and money.



VorTek
INSTRUMENTS

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Specifications

Performance

Flow Range	± 0.03 ft/s ~ ± 40 ft/s (± 0.01 m/s ~ ± 12 m/s)
Accuracy	$\pm 1\%$ of reading (0.5% according to calibration)
Repeatability	0.15% of reading
Linearity	$\pm 0.5\%$
Pipe Size	1" to 200" (25 mm to 5000 mm)
Fluid	Clean liquids with little to no air bubbles or particles

Function

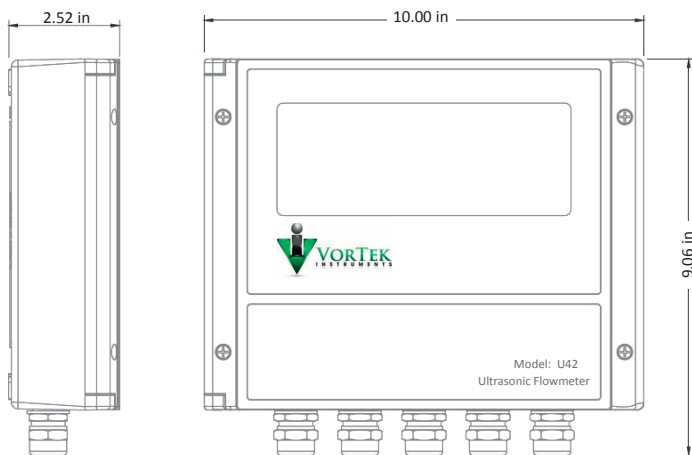
Outputs	Analog output: 4 ~ 20 mA, max load 750 Ω .
Pulse output:	0 ~ 9999 Hz, OCT, (min. and max. frequency is adjustable)
Relay output:	SPST, max 1 Hz, (1 A @ 125 VAC or 2 A @ 30 VDC)
Communication	RS-232 & RS-485 Modbus
Memory	SD card (Max 4GB)
Power Supply	90 to 245 VAC, 48 to 63 Hz, or 10 to 36 VDC
Display	240*128 back lit LCD
Transmitter Temperature	-40°F ~ 140°F (-40 °C ~ 60°C)
Humidity	Up to 99% RH, non-condensing

Physical^o

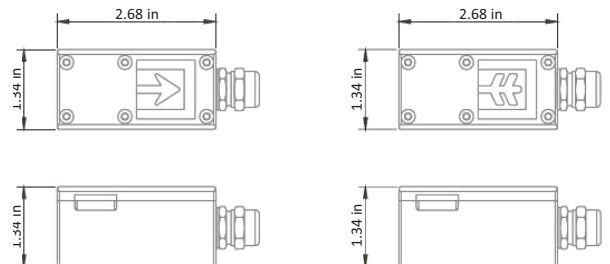
Transmitter	Aluminum, IP65
Transducers	IP68
	Encapsulated design
	Double-shielded transducer cable
	Standard/maximum cable length: 30 ft / 100 ft (9 m / 30 m)

Physical Specifications

Transmitter

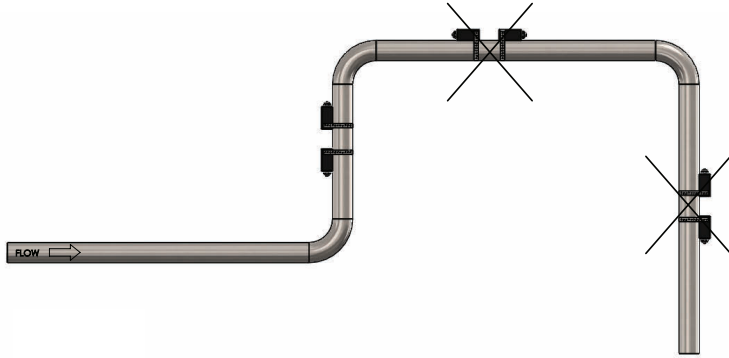


Transducer



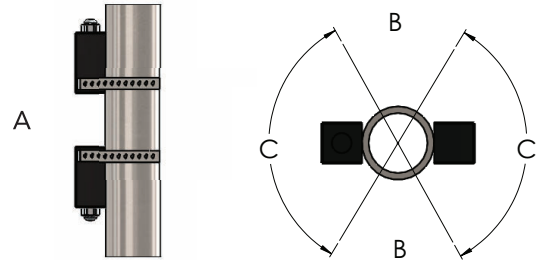
Installation Site Selection

The ultrasonic flow meter requires that the pipe is full of liquid, as bubbles will greatly impact the accuracy of measurement. Please avoid the following installation positions:



The suggested installation method is as follows:

A is for an upright pipeline. Please notice that the fluid is flowing upward. B is for a horizontal pipeline. The transducers need to be installed inside the C area. The angle for area C has a maximum of 120°.



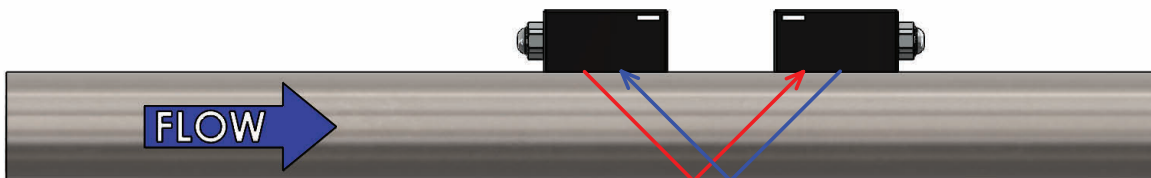
Straight Pipe Demand

We suggest avoiding valves, T-branch pipes, and elbows if the pipe conditions allow. When dealing with more than one interfering resource, please satisfy the largest position installation requirement.

Piping Conditions		
Condition	Pipe Diameters, D	
	Upstream	Downstream
One 90° elbow before meter	10D	5D
Two 90° elbows before meter	15D	5D
Two 90° elbows before meter, out of plane	30D	10D
Reduction before meter	10D	5D
Expansion before meter	20D	5D
Partially open valve	30D	10D

Measuring Principle

Transit time technology utilizes ultrasonic waves transmitted and received through moving liquid. The difference between upstream and downstream transit time can be used to calculate flow and velocity.



Model Number Information

Model	Transmitter	
U42	Ultrasonic Flow Meter	Wall Mount
	Flow Range :	±0.03 ft/s ~ ±40 ft/s (±0.01 m/s ~ ±12 m/s)
	Accuracy :	±1% of reading (0.5% according to calibration)
	Repeatability :	0.15% of reading
	Display :	240*128 backlit LCD
	Power Supply :	90-250 VAC ,48-63 Hz, or 10-36 VDC
	Output :	4-20 mA, OCT, Relay
	Communication :	RS-232/RS-485, Modbus Protocol
Code	Model	
1	OCT, Relay, RS-232/RS-485, 4-20 mA (Volumetric)	
2	OCT, Relay, RS-232/RS-485, 4-20 mA, RTD input (Energy)	*must select Code PT1000 or provide external temperature sensors
Code	Transducers	
C1U	Clamp-on, IP68. Operating temperature: -40°F ~ +266°F (-40°C ~ +130°C)	
C1H	Clamp-on, IP68. Operating temperature: 32°F ~ +356°F (0°C ~ +180°C)	
W1	Insertion, IP68. Operating temperature: -40°F ~ +266°F (-40°C ~ +130°C)	
W1H	Insertion, IP68. Operating temperature: 32°F ~ +356°F (0°C ~ +180°C)	
XXX	Cable Length	
030	Standard length 30 ft (9 m)	
XXX	Max length to 100 ft (30 m)	
Code	Temperature Sensors	
PT1000	PT1000 temperature sensors	
		*must select Code 2 for RTD input

Standard model:	U42-1-C1U-030
Description:	Standard clamp-on type ultrasonic flowmeter with open collector transistor (OCT), relay, RS-232/RS-485, 4-20 mA output, and 30 ft cable.

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