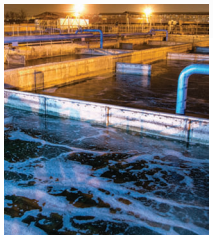
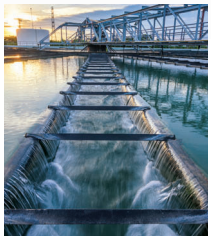
SONOPRO® Water Series Transit Time Flowmeter

Model U43 Clamp-On/Insertion Ultrasonic

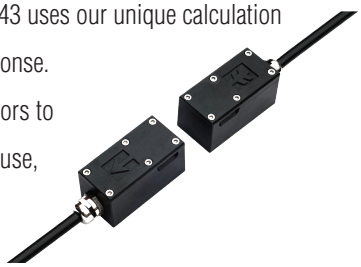





The U43 ultrasonic flow meter can be used in many measurement applications, including HVAC, water treatment, and irrigation

U43 is a wall-mount, clamp-on or insertion type ultrasonic flow meter using transit time technology to accurately meter water applications. 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® U43 uses our unique calculation software to ensure high accuracy and low velocity response.

U43 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	±0.09 ft/s ~ ±20 ft/s (±0.03 m/s ~ ±6 m/s)
Accuracy	±1.5% of reading (1% according to calibration)
Repeatability	0.2% of reading
Linearity	±1%
Pipe Size	1"to 48"(25 mm to 1200 mm)
Fluid	Water

Function

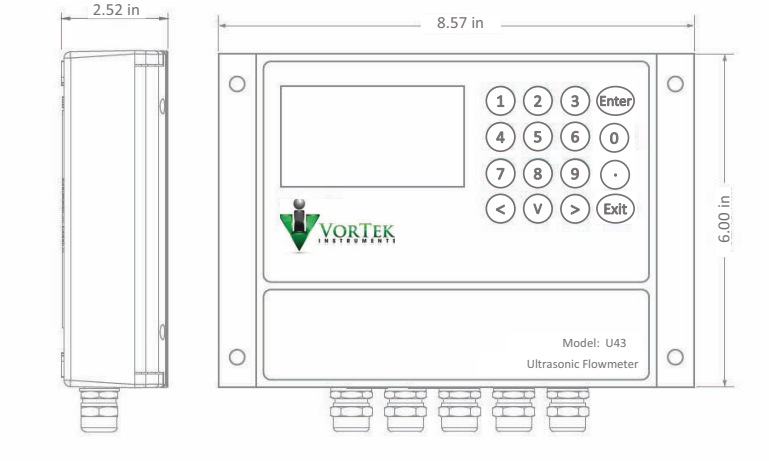
Outputs	Analog output: 4 ~ 20 mA, max load 750 Ω.
	Pulse output: 0 ~ 10 KHz
Communication	RS-232 & RS-485 Modbus
Power Supply	10 to 36 VDC @ 1A
Display	240*128 back lit LCD
Transmitter Temperature	-4°F ~ 140°F (-20°C ~ 60°C)
Humidity	Up to 99% RH, non-condensing

Physical

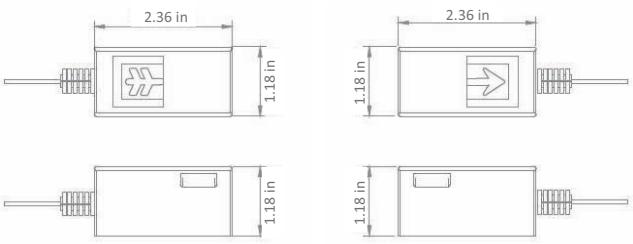
Transmitter	PC/ABS, IP65
Transducers	IP68
	Encapsulated design
	Double-shielded transducer cable
	Standard/maximum cable length: 30 ft / 100 ft (9 m / 30 m)

Physical Specifications

Transmitter



Transducer



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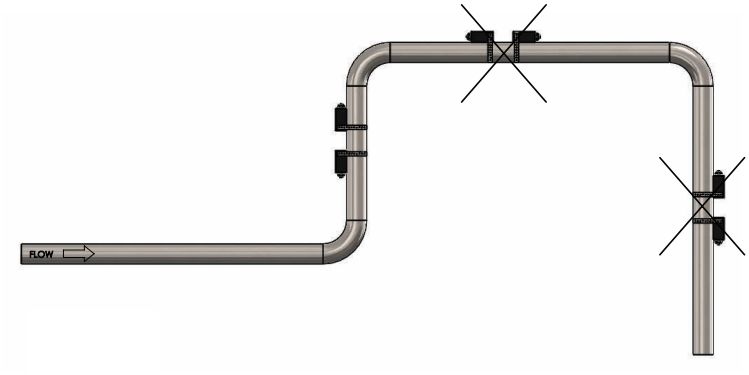
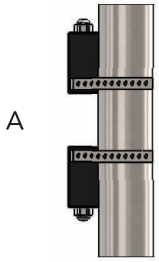
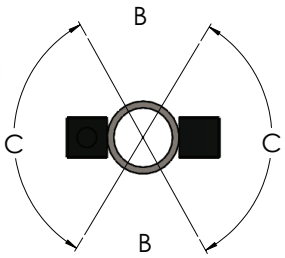
Installation Site Selection

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°.





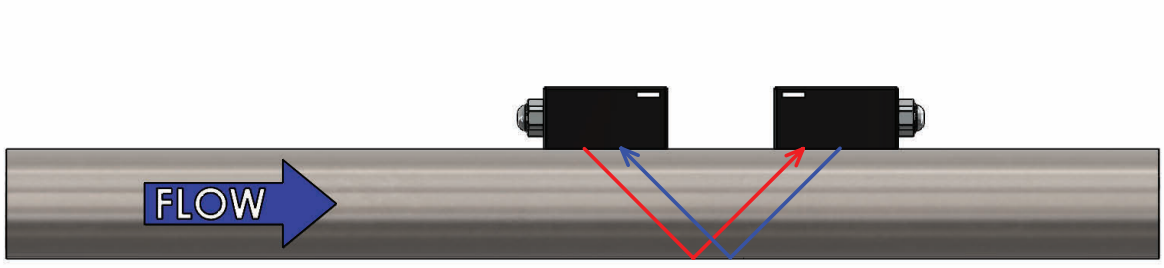
Straight Pipe Demand

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.



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Model Number Information

Model	Transmitter		
U43	Ultrasonic Flow Meter	Wall Mount	
	Flow Range：	±0.09 ft/s ~ ±20 ft/s (±0.03 m/s ~ ±6 m/s)	
	Accuracy：	±1.5% of reading (1% according to calibration)	
	Repeatability：	0.2% of reading	
	Display：	240*128 backlit LCD	
	Power Supply：	10-36 VDC @ 1A max	
	Transmitter Enclosure：	IP65, ABS	
	Output：	OCT pulse output 0-10KHz, Relay output, 4-20mA optional	
	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**		
CD01	Clamp-on, IP68. Operating temperature: -40°F ~ +140°F (-40°C ~ +60°C)		
W1	Insertion, IP68. Operating temperature: -40°F ~ +266°F (-40°C ~ +130°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: U43-1-CD01-030

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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