



Introduction

TSonic-602 portable ultrasonic flow meter is a type of portable instrument for non-invasive, quick flow and energy measurement with clamp-on technology for many types of piping. Portable ultrasonic flow meter support quickly verifies the flow reading of another meter and to data log flow system values over an extended time period. The meter can be easily moved and installed in different pipes and convenient to carry site to site. The innovative design includes matched precision transducers and signal processing circuitry to accurately measure the flow of most liquids over a wide range of velocities. Its portability makes it an excellent choice for measuring flows throughout the plumbing infrastructure to verify sensor pump and valve performance.



Advantages

TSonic-602 Portable ultrasonic flow meter is easy to install for Pipe diameter range up to 4000 mm. One analog input and output 0/4 – 20 mA, no pressure head loss, no moving parts which is very easy to maintain and replace. Support BTU function, could be used as a portable type BTU (energy) meter. Compared with other type of flow meters, portable type ultrasonic flow meter could be easily moved and convenient to carry in different sites.



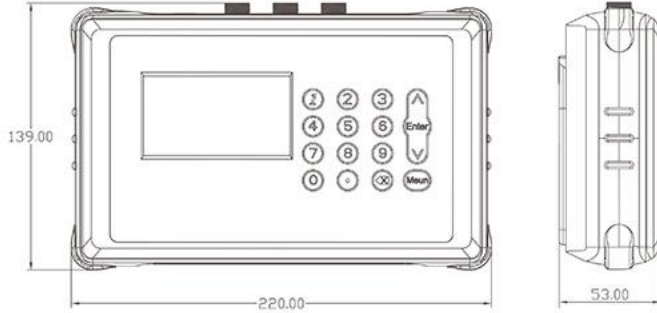
Applications

TSonic-602 ultrasonic flowmeter is widely applied in oil industry, water treatment, pure water, chemical and etc.

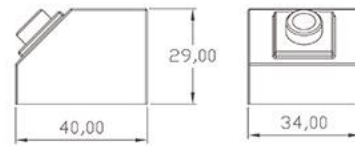


Portable type Ultrasonic Flow Meter Dimension

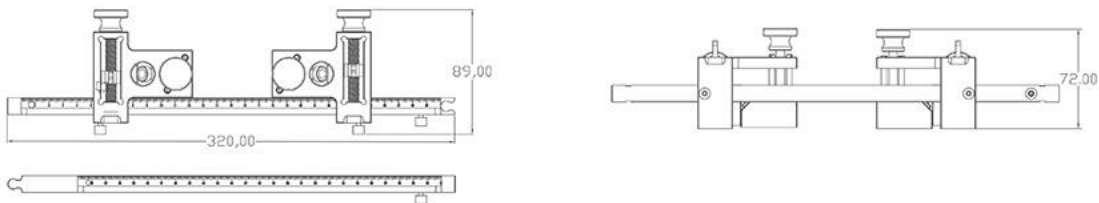
Transmitter size



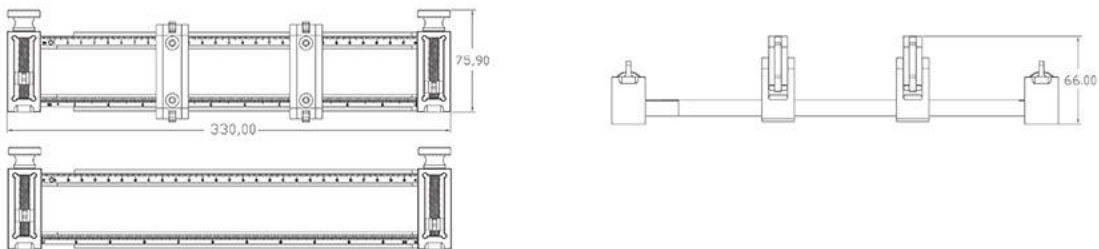
transducer size



ST mounting kit size



DT mounting kit size





Portable type Ultrasonic Flow Meter Model Selection

TSonic-602	Specification	X	X	X	X	X
Type of Transmitter	Ultrasonic Flow Meter	1				
	Ultrasonic Energy/Btu Meter function(RTD)	2				
Type of transducers	Clamp-on, IP68, -40°C~ +80°C		D4			
	Clamp-on, IP68, -40°C~ +130°C		D4U			
Mounting track	Single guide mounting type bracket			ST		
	Dual guides mounting type bracket			DT		
Cable length	5m (standard)				P5	
	XXm				PXX	
Temperature Sensor	Without a pair of clamp on PT1000 sensor					WT
	With a pair of clamp on PT1000 sensor 9m (BTU meter only)					WP

Installation Environment

It's better to install the flow meter indoors; if you have to install it outdoors, you should take measures to avoid direct sunlight or rainwater.

The flow meter shall be installed away from high temperature, thermal radiation from equipment or corrosive gas.

Ultrasonic flow meters can't be installed nearby motors, transformers or other power sources that are easy to cause electromagnet interference. DO NOT install ultrasonic flow meters nearby frequency converters or DO NOT connect it with the distributing cabinet of frequency converters to avoid interference.

In convenience for installation and maintenance, keep sufficient space around the flow meter.

Support of Flow meter

Avoid installing the flow meter on pipes with mechanical vibrations. If you have to install it there, DO take shock absorption measure. You could install a hose for transition, or set support points with absorbing pads on the pipe at 2DN in both upstream and downstream of the flow meter. Try not to install the flow meter on the longer overhead pipes because the sagging of pipes would cause leakage between the flow meter and the flanges. If you have to do it, you must set support points on the pipe at 2DN in both upstream and downstream of the flow meter.

Requirements on Liquid-receiving Material

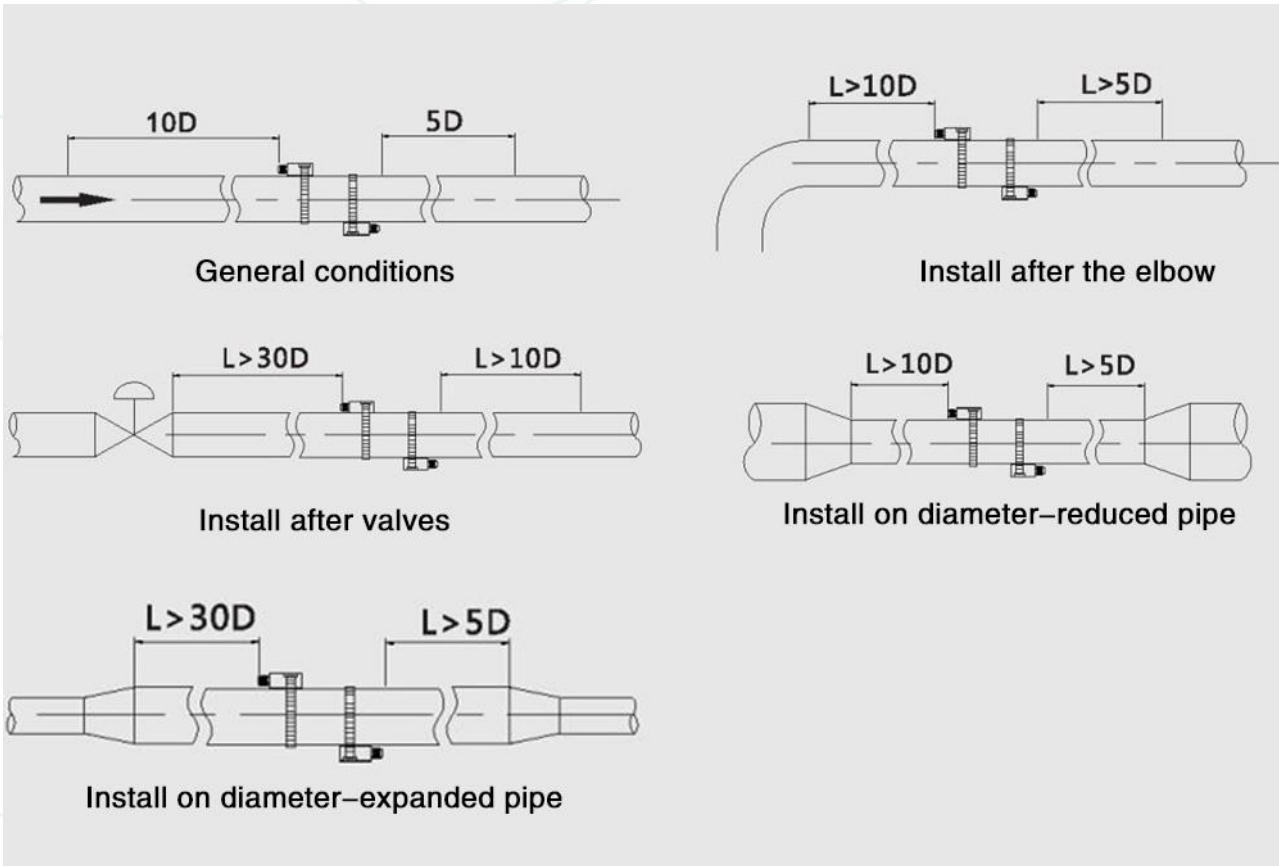
The ultrasonic flow meter could measure single-medium liquid flow; The same medium could be divided into three specifications (low temperature, high temperature and superhigh temperature), different flow meters should be used for different temperatures.

Dangerous Conditions

You could select the flow meter with an explosion-proof housing, and intrinsic safety explosion-proof flow meter with intrinsic safety design circuit to ensure its safety and flame-retardant operation. Each flow meter should have a nameplate clearly identifying its certifications. Please DO install and use the flow meter according to the explosion-proof grade and protection grade as shown on the nameplate.



To ensure measurement accuracy of the flowmeter, try to satisfy the following requirements on the length of straight pipe sections installed nearby the flowmeter: upstream >20D, downstream > 10D.



Technical Data

Size	DN25-DN4000mm (1"- 157")
Accuracy	$\pm 1\%$ of measured value
Flow Range	± 0.03 ft/s $\sim \pm 40$ ft/s (± 0.01 m/s $\sim \pm 12$ m/s)
Fluid	Single medium liquid
Pipe Material	Carbon steel, stainless steel, PVC and other compact material pipe
Power Supply	Rechargeable Lithium Battery Power (Continuous operation of main battery 24 hours with easily replaced battery cartridge).
Outputs	Analog output: 4~20mA, Max 750 Ω .
Inputs	Analog input: 4~20mA, Max 250 Ω .
Communication	RS485
Interval	1 ~ 99999 seconds
Temperature	Transmitter: $-40^{\circ}\text{C} \sim 60^{\circ}\text{C}$ Transducer: $-40^{\circ}\text{C} \sim 80^{\circ}\text{C}$ (standard), $-40^{\circ}\text{C} \sim 130^{\circ}\text{C}$ (optional)
Humidity	Up to 99% RH, non-condensing
Protection	Transmitter: NEMA13, IP54 Transducer: IP68
Cable	5m
SD Card	16G