

### Introduction

A broad range of factors such as the type of liquid to be measured, pipe material and pipe size can influence your choice of clamp-on ultrasonic flow meter and selecting a suitable model requires an understanding of the different features and options available. Here are 10 Top Tips to help you choose the most suited clamp-on ultrasonic flow meter for your liquid flow application

Credit: <http://www.processindustryinformer.com/top-tips/top-10-tips--for-selecting-a-clamp-on-ultrasonic-flow-meter-for-liquid>

### Tips

#### 1. Why choose a clamp-on ultrasonic flow meter?

Flow meters which clamp on to the outside of the pipe offer many advantages over traditional in-line flow meters: easy installation, no moving parts, no pressure loss, no compatibility issues etc.

#### 2. What are the two basic principles?

Time of Flight, ultrasonic pulses are timed as they are transmitted and then received within a pipe. Doppler Shift, where suspended solids and bubbles reflect an ultrasonic beam.

#### 3. Which principle is best for me?

It depends on your application: clean liquids with little air or suspended particles are suitable for Time of Flight, whereas slurries or dirty water with entrained air or solids are suited to Doppler models.

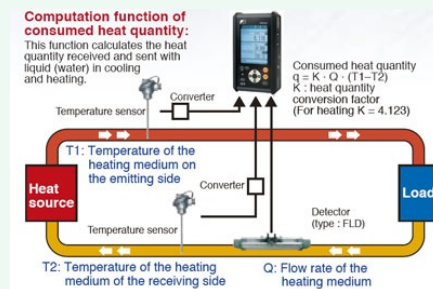
#### 4. What quick tips are available for proper installation?

Always take your time to read the installation instructions as this is critical for accurate and reliable readings especially for Time of Flight models. Install in recommended straight pipe lengths avoiding vertical downward flow conditions, turbulent flows (unless Doppler) and heavily corroded pipes. Very small pipes need specialist meters for accurate and reliable results.

#### 5. Are models for measuring heat energy available?

Yes there are several manufacturers offering ultrasonic heat meter versions which can calculate measurements in chilled and hot water systems, usually with a choice of energy management system compliant output protocols such as Modbus or BACnet.

### Portable Flow Meter



### Tips Continued

#### 6. What if I have lined pipes?

Time of Flight ultrasonic flow meters can accommodate this feature during set-up where the user enters all of their critical pipe information / specification to ensure accurate calculation data for the flow measurement.

#### 7. Can I use the same model on different sized pipe?

Yes, however it may be a requirement to purchase more than one set of pipe transducers, since one size may cover the range of small pipes and another that of large pipes. Most portable ultrasonic flow meters come with a selection of transducer sizes and even principles in the carry case.

#### 8. Is this principle MID approved within Europe?

The simple answer is no, as the ability of the installer to attach the measurement transducers to the pipe incorrectly is always a possibility, which renders any guaranteed performance figures useless.

#### 9. Can clamp-on ultrasonic flow meters be re-calibrated?

Yes most flow calibration companies will offer this service, however it may not be specific to your actual application parameters.

#### 10. Is software available to program the meter and analyze stored data?

Yes, most manufacturers will offer some form of software support for their products. On low end models this may be just to import stored data, whereas on higher end models this may display real-time data, signal analysis and offer full meter set-up and configuration.