How to Choose the Right Ultrasonic Flow Meter

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Ultrasonic flow meters provide a number of advantages, from ease of installation and limited downtime to lack of intrusion into your pipes. These meters provide reliable measurement data without the need to interrupt your process or risk leaks in your facility. You may however be overwhelmed by the choices of ultrasonic flow meters on the market.

The team at Cross Process Solutions are experts when it comes to ultrasonic flow meters. We are experienced in start up, commissioning, troubleshooting, and flow verification. If you are looking for a new ultrasonic flow meter, working with an expert is key in making sure you pick the right meter for your application. While there are certainly very sophisticated ultrasonic meters available, they may not be necessary for every project. Below are some key considerations when selecting the right meter.

Medium

One of the key considerations when selecting an ultrasonic meter is the medium that will be measured. Water is the easiest and least expensive to measure. This includes chilled water, medium temperature hot water, and domestic water flow. If you are measuring anything with solids mixed in such as wastewater or a slurry, it becomes more difficult to measure flow. Some process chemicals and gasses are also quite complicated to measure. If you are measuring any of these more difficult mediums then it will likely require a more sophisticated ultrasonic flow meter.

Temperature

Temperature plays a huge role in selecting an ultrasonic flow meter. In general, anything in a “normal” temperature range is easier. Once the temperature goes above 250 degrees fahrenheit the application requires something more advanced. The same is true for extremely cold mediums such as liquid nitrogen.

Pipe Type

When it comes to pipe type, stainless steel, copper, and carbon steel pipes are pretty easy for ultrasonic flow meters. On the other hand, pipes made of ductile iron or anything with a liner such as asbestos cement are considerably more difficult. Likewise pipes with thicker walls can pose more of a challenge for lower end

ultrasonic meters.

Pipe Size
In general, ultrasonic flow meters can handle anything from .5 inch to 256 inches in diameter. However, something to keep in mind is that they will not work if the pipe is not full of the medium.

Pipe Run
Pipe run refers to the length of pipe you have available to install the ultrasonic flow meter. Longer runs are easier, so if you have a shorter pipe run it can be done, but will require a higher end flow meter.

Needed Accuracy
Another consideration is the needed accuracy for the application. If you are just verifying flow or making sure you have flow, use of a less advanced meter may be the best choice. However, if you are using the flow data for billing purposes or to control a batching process, you will want to make sure that the data is very accurate and should invest in a better quality meter.

Signal Output
Do you need a simple 4/20 ma output or do you need a digital output that will feed data into your facility's control system? If you are doing more with your data, you will need to plan to spend more for a meter that can communicate with your controls.

Configuration
Are you collecting measurement from a single point or are you looking for a dual channel output with multiple sets of transducers? As you might imagine, a single point measurement system is considerably less expensive than one with multiple sets of transducers.

Overall, at Cross we want to help you find the perfect meter for your application. If, by chance, an ultrasonic flow meter isn't the right your particular application, Cross has expertise in a wide array of flow measurement types. We'll work with you to determine exactly the right type of meter to suit your application, your budget and your reporting requirements.