

Application Note

SonoPro® Clamp-On Ultrasonic Flow Meters: Ideal Solution for District Energy and HVAC Applications



District energy and commercial facilities such as universities, hospitals, and airports are faced with significant challenges in optimizing the performance of their HVAC systems. These modern systems are often quite complex, consisting of chilled and hot water systems, boilers, cooling towers, pumps, and metering equipment used throughout their hydronic systems. Optimizing these systems is well worth the investment as increasing energy efficiencies of the heating and cooling infrastructure not only leads to more environmentally friendly facilities but also provides significant cost savings.

Submetering the heating and cooling systems of these facilities is especially important. Facility managers are increasingly being mandated to meter these utilities. They often have a financial interest in the accuracy of these measurements as they are used for billing or cost allocation purposes. Older facilities were not built with metering capabilities as these requirements have been added over time through increased regulations. SonoPro® clamp-on ultrasonic flow meters are ideal for retrofitting these older systems as costly and time-consuming piping modifications are not required.

Monitoring, controlling, and balancing of energy flows within HVAC systems will continue to grow in importance. With environmental regulations and financial incentives being the primary drivers. SonoPro flow meters are available with clamp-on RTD temperature sensors. Using these temperature measurements, SonoPro flow meters perform the necessary calculations to provide a reliable (BTU) energy measurement. With all flow transducers and temperature sensors connected to a single unit, SonoPro flow meters are a fully integrated energy measurement solution. This eliminates the error potential associated with using multiple devices to perform energy calculations.

District Energy and HVAC Applications

Hot and Chilled Water Systems

Energy Metering

Submetering

Boiler Feedwater

Glycol Metering

Cooling Tower Systems

Leak detection

Why choose a clamp-on ultrasonic flow meter?

Clamp-on ultrasonic flow metering is one of the fastest-growing metering technologies for district energy and HVAC applications. Clamp-on ultrasonic flow meters offer the following benefits:

Feature	Benefit
 No maintenance required	Low total cost of ownership
 Non-invasive installation	No piping modifications required. Saves time, money, and avoids potential safety issues
 No wetted or moving parts	No need to recalibrate or perform periodic maintenance
 No pressure drop	No need to overcome pressure losses; reduction in pump energy usage
 High turndown ratio	Captures a wide range of flow rates; peak and off-peak loads
 No drifting, no recalibration required	No process interruptions or costly downtime
 Bi-directional flow measurement	No need for additional meters



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