



# Improve your energy efficiency with ultrasonic flow metering



# "If you cannot measure it, you cannot improve it."

Lord Kelvin

At BHGE, we understand the need to accurately monitor, measure and analyze your energy efficiency to combat rising energy prices and reduce waste.

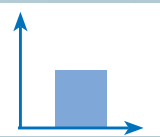
From large industrial facilities, military bases and university campuses to high-rises, ships, hospitals, museums and more, we can help you meet your energy monitoring needs.

Institutions worldwide use our flow meters for their operations, helping them achieve efficiency goals. We can work with you to achieve yours.

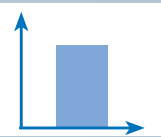
Efficiency



Year 1



Year 2



- Accurate measurement
- Improved performance

Operating Cost



Year 1



Year 2



- Maintenance & operation costs
- No interruption in service




















## Why choose an ultrasonic meter?

Ultrasonic flow metering has become one of the fastest growing technologies for district energy applications. Unlike older mechanical technologies such as turbine and positive displacement that are subject to mechanical issues, ultrasonic advantages include:

Advantage	Benefit
 <b>No drifting, no periodic calibration</b>	No loss of process control, optimization of assets and efficiency, no downtime or expense from calibration
 <b>No pressure drop</b>	No wasted energy from running a pump, no need to purchase a larger size pump
 <b>No restriction in the pipe</b>	Contamination will not affect meter's measurement (drifting) or cause any damage to meter
 <b>No filters or strainers</b>	No maintenance cost
 <b>Bi-directional measurement</b>	No additional meters required
 <b>No moving parts</b>	No loss of process control, optimization of assets and efficiency, no downtime or expense from calibration
 <b>Advanced diagnostics</b>	Better data for decision making
 <b>No required maintenance</b>	Low cost of ownership

Ultrasonic clamp-on flow meters share all the advantages of ultrasonic flow metering, and are installed on the outside of the pipe without cutting into the pipe or shutting down the process. Used for fixed installations and as portables to measure flow at multiple locations, clamp-ons offer:

Advantage	Benefit
 <b>Installation on new or existing pipes</b>	Save time and money not cutting into pipe, install in different locations, install anytime
 <b>Installation on outside pipe</b>	Save time and money not cutting into pipe, no process shutdown, no process contamination
 <b>No welding, no extra parts</b>	Save installation labor and cost
 <b>No leakage</b>	No contamination
 <b>No required maintenance</b>	Low cost of ownership



## Big government, **small energy consumption.**

A U.S. federal agency chose GE's DigitalFlow DF868 flow meters to measure numerous points on its mechanical chillers, enabling the agency to monitor energy usage, conserve resources and reduce maintenance costs at many of its facilities in Washington D.C.

### **BUSINESS CHALLENGE**

Reduce energy consumption in U.S. government buildings.

### **GE SOLUTION**

- DigitalFlow DF868 clamp-on meters

### **CUSTOMER BENEFITS**

- Increased measurement range
- Reduced overall maintenance costs
- Eliminated pressure drop

## Prescription for **cost savings.**

After a major Canadian medical company acquired a large campus, it selected GE's DigitalFlow DF868 and AquaTrans AT868 clamp-on meters to track energy costs. Since installing the ultrasonic flow meters to measure chilled water and condensate, the company realized energy cost savings and expects to achieve more in years to come.

### **BUSINESS CHALLENGE**

Obtain and track data on energy costs

### **GE SOLUTION**

- DigitalFlow DF868 clamp-on meter
- AquaTrans AT868 clamp-on meter

### **CUSTOMER BENEFITS**

- Accurately recorded data to make energy management decisions



## Being cool and smart at the same time.

A large mid-western U.S. university selected GE's AquaTrans AT868 liquid ultrasonic flow meters to help diagnose a cooling problem with its 15,000 ton central chiller plant that could not consistently cool 65 buildings on a hot day. The meters identified inconsistencies to help engineers make improvements to the cooling system.

### **BUSINESS CHALLENGE**

Reliable cooling of buildings

### **GE SOLUTION**

- AquaTrans AT868 clamp-on meter

### **CUSTOMER BENEFITS**

- Improved system for more efficient and consistent building cooling

At an expanding university campus in the U.S. northeast, GE's DigitalFlow GC868 was indispensable in diagnosing whether the existing underground network of steam pipes supporting the 450-acre campus had capacity to power a new campus expansion plant. The university obtained the critical information required for its decision without disrupting processes and services.

### **BUSINESS CHALLENGE**

Accurately measure steam distribution

### **GE SOLUTION**

- DigitalFlow GC868 clamp-on meter

### **CUSTOMER BENEFITS**

- Improved billing accuracy
- Increased meter performance
- Decreased ownership costs



# Improve your bottom line with flow solutions from BHGE

From determining which flow meter helps solve your particular energy challenge to installation, data analysis and service support, the BHGE global team brings you some of the industry's strongest flow metering experience.

## LIQUID FLOW MEASUREMENT

Ultrasonic portable or fixed clamp-ons for ease of use and simple installation on outside of the pipe

## STEAM AND NATURAL GAS FLOW MEASUREMENT

Ultrasonic steam and gas flow meters with wide range, high resolution and zero pressure drop or energy loss  
Vortex flow meters for cost-effective and reliable mass flow measurement

## ENERGY FLOW MEASUREMENT

Wetted transducer installations with high accuracy and no pressure drop

Portable meters to spot check existing pipes for system efficiency and to troubleshoot other flow meters and valves

Powered by smart device technology, the TransPort PT900 portable flow meter for liquids makes your job easier. It combines the best in clamp-on performance with a great user experience so that you can do a flow measurement in just minutes.



## FLOW SURVEYS

BHGE field technicians can help you understand your process better. They will tailor a survey to your needs, perform the survey on site using the latest flow measurement technology, and deliver results and recommendations in a formal report. If any follow-up is required, BHGE will work with you to propose solutions to any process issues that are uncovered during the survey.

## SUPPORTING SERVICE AGREEMENTS

Service agreements can help control equipment costs, reduce operational risks and ensure top performance of your production assets. These agreements feature fixed, long term service costs that are below standard ad hoc service rates.



MV80 and MV82 multivariable vortex meters measure the mass flow rate of steam, gases and liquids.



Ultrasonic DigitalFlow DF868 liquid and GS868/XGS868i steam flow meters deliver cost effective and accurate energy measurement.

The AquaTrans AT600 clamp-on for liquids is designed to be accurate, durable and cost-effective. Installed in just four steps, the AT600 can be quickly up and running.





## A Panametrics and GE legacy of ultrasonic excellence



Ultrasonic transducers developed for NDT applications

1963



Ultrasonic flow meter, US patent

1971



Ultrasonic measuring system with isolation, US patent

1975



First commercial Panametrics liquid ultrasonic flow meter

1979



Flare ultrasonic flow meter patent

1984



Panametrics launches portable PT868

1992



Panametrics launches liquid flow DF868

1994



Panametrics launches steam flow GS/XGS868

1999



Panametrics launches portable PT878 and clamp-on AT868

2001



Panametrics acquired by GE

2002



GE launches clamp-on AT600

2015



GE launches portable PT900

2017

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