



# Take Control of Your Facility Flows.

A SIERRA FLOW ENERGY FIELD GUIDE



## WHEN YOUR FLOWS ARE RUNNING GOOD, YOU'RE RUNNING GOOD.

To achieve your goals, you want to make your facility as efficient and productive as possible and know you are in control of costs. Accurate flow measurement is one great way to make this happen. But why does flow measurement need to be so hard? There are so many different flow applications and so many different

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meters and technologies to choose from. It can be overwhelming. With one family of meters spread across three flow technologies, Thermal, Vortex and Ultrasonic, Sierra provides a comprehensive solution.

## EASY STEPS

### STEP ONE – Understand your key flow energy applications: natural gas, compressed air, steam, and hot/chilled water

#### Natural Gas Measurement Boiler/Burner Efficiency

Need to measure fuel gas flow over a wide range? A single Thermal Mass Flow Meter can measure very high flows at peak demand or very low flows during startup and shutdown to always assure the best fuel to air ratio in your burners and boilers.



#### Key Questions

- Are your boilers running efficiently?
- What's the inlet flow rate of natural gas to your boiler?
- How can you accurately measure your flow over a wide flow range?
- If temperature or pressure change in your line, how do you maintain an accurate flow rate?
- What flow meter technology is best for natural gas measurement?

#### Compressed Air Measurement

Want to be convinced that the energy costs to generate your compressed air don't go to waste? Thermal Mass Flow Meters are ideal for detecting compressed air leaks. Due to their low flow sensitivity and compact insertion probe design, you can easily move from place to place to find and eliminate leaks when you see flow where there is no air demand.



### Key Questions

- How much compressed air are your air compressors producing?
- How much compressed air is being allocated to other processes?
- Are there compressed air leaks in the system?

### Steam Production, Usage, and Allocation

Concerned that pressure drop in your delivery system is affecting your steam flow? Multivariable Vortex Flow Meters measure steam pressure, temperature and mass flow with one compact meter, so you have confidence your steam plant and delivery system is efficient.



### Key Questions

- How much steam are your boilers producing?
- Is your steam pressure drop affecting your flow measurements?
- How can you measure steam in large pipes without shutting down your operation?
- When pressure or temperature change, how do you know if your steam flow measurement is still accurate?
- How much steam are you allocating to each part of your facility or campus?
- Do you have a steam leak?

### Water Measurement & Energy BTU Measurement

Water supply and usage has a significant impact on costs. Measure every drop without cutting a single pipe with a clamp-on Ultrasonic Flow Meter. Integrated temperature measurements know how many BTUs your hot or chilled water loop actually delivers.



### Key Questions

- How much water are you using for key processes in your facility?
- How much inlet water is your boiler using?
- How many BTUs is your hot or chilled water loop actually delivering?

## **STEP TWO** – Find the right flow meter to accurately measure your key gas, liquid and steam flows

Sierra manufactures one complete family of flow meters we call the iSeries (See following pages for detail). iSeries meters work as a team to handle nearly any flow application found in industry. They provide one complete flow solution spread across three technologies, Thermal, Vortex and Ultrasonic. The iSeries are the first industrial flow meters to feature user friendly software apps. They also share a common user interface, so you don't have to re-learn each meter.

## **STEP THREE** – Find one flow energy management expert to answer all your questions

If your flows are running good, you know you're running good. Talk to one company. Let Sierra be your guide. We can help you master your flow energy with the iSeries family of flow meters. Sierra has 45 years of experience designing and manufacturing innovative flow sensors and meters. We pride ourselves on having the very best calibration to assure that meter accuracy and repeatability is always spot on.

### **Schedule a FREE Flow Energy Review Today!**

Three easy options:

- 1) Let's connect!
  - Call: 800.373.0200
  - email: [flow\\_expert@sierrainstruments.com](mailto:flow_expert@sierrainstruments.com)
  - Learn more: [www.sierrainstruments.com/flowexpert](http://www.sierrainstruments.com/flowexpert)
- 2) Sierra experts will listen to your flow needs and recommend solutions.
- 3) We can even visit your site for free!



# Sierra iSeries Family: Flow Meter Benefit / Feature Comparison

The chart below is a comparison of the 3 technologies in the iSeries family and the common user interface and features they share.

Thermal	Vortex	Ultrasonic
QuadraTherm®	InnovaMass®	InnovaSonic®

- 640i Insertion / 780i Inline
- Thermal Mass
- Platinum wound
- QuadSensor - DrySense - Raptor OS

- Accuracy: Up to +/- 0.5% of reading
- Gases: Air, natural gas, mixtures, flammables, inert gases
- Flow rates: Down to 0.03 smps (0.1 sfps) & up to 305 smps (60,000 sfpm)
- Pipe/duct sizes: 0.5 inches to 72 inches (1.0cm to 1.8M)
- Hot-tap probe retractor
- 100:1 turndown

### APPS

- ValidCal™ Diagnostics
- Flow Totalizer
- MeterTuning
- Dial-A-Pipe™: Change pipe size
- Dial-A-Gas™: Change gas type
- qMix

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[sierrainstruments.com/thermal-principle](http://sierrainstruments.com/thermal-principle)

- 240i Inline / 241i Insertion
- Vortex Shedding
- Bluff bar/Potted piezo
- Raptor OS - Tuning

- Accuracy: Up to +/-0.7% of reading
- Fluids: Mass or volumetric flow metering of gases, liquids, steam
- Pipe/duct size: 1.0 to 72 inches (2.5cm to 1.8M)
- Hot-tap probe retractor
- 30:1 turndown

### APPS

- ValidCal™ Diagnostics
- Datalogging
- MeterTuning
- Dial-A-Pipe™: Change pipe size
- Dial-A-Fluid™: Change fluid type
- FloPro™

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- 207i w/clamp-on or Insertion Sensors
- Transit-time Ultrasonic
- Encapsulated piezo
- Raptor OS - Real time temp comp

- Accuracy: +/- 0.5% of reading from 0.16 to 40 ft/s (0.05 to 12 m/s)
- Fluids: Water and all liquids
- Fits a wide range of pipe sizes from 2 inches to 236 inches (5.0cm to 6.0M)
- Clamp-on or insertion transducers
- Optional clamp-on or insertion PT 100 temperature inputs for thermal energy/BTU measurement

### APPS

- ValidCal™ Diagnostics
- Datalogging
- MeterTuning
- Quick setup
- Signal setup
- EnergyPro™

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**LEARN MORE** about Sierra's iSeries: [sierrainstruments.com/one](http://sierrainstruments.com/one)

# Find the Sierra Flow Measurement Technology that Works for You.

The chart below lists common flows, flow application needs and designates the best flow meter technology.

	Thermal	Vortex	Ultrasonic
<b>GASES</b>			
Natural Gas	Green	Green	
Gas Mixtures	Green	Green	
High Temperature Gas	Green	Green	
Compressed Air	Green	Green	
Ambient Air	Green	Green	
Portable	Green	Green	
<b>LIQUIDS</b>			
Water		Green	Green
Other Liquids		Green	Green
Non-instrusive			Green
Portable		Green	Green
<b>STEAM</b>			
Saturated		Green	
Superheated		Green	
High Temperature		Green	
Loop Power		Green	
Portable		Green	
<b>ENERGY</b>			
Thermal Energy/BTU		Green	Green



**SIERRA®**

sierrainstruments.com

GLOBAL EMAIL: INFO@SIERRAINSTRUMENTS.COM

**EUROPE**

Bijlmansweid2 / 1934RE Egmond aan den Hoef  
The Netherlands  
ph +31 72 5071400

**NORTH AMERICA**

5 Harris Court, Building L / Monterey, CA 93940  
United States  
ph 800.866.0200 / 831.373.0200

**ASIA-PACIFIC**

Second Floor Building 5 / Senpu Industrial Park  
25 Hangdu Road Hangtuo Town / Pu Dong New District  
Shanghai, P.R. China Post Code 201316  
ph +8621 5879 8521/22