CONTROL ASSOCIATES

Flow Measurement Technology Guide

Achieve Measurement Confidence for Every Application

Control Associates' Team of Engineers Can Help You Find and Size the Best Flow Meter for Your Application.

This Guide can help you begin your selection process. We recommend that you evaluate conditions across the full flow range of your application to ensure a flow meter meets all of your needs. You may need to consider some trade-offs when selecting a meter—for instance, increasing accuracy or turndown may also increase permanent pressure drop. In addition, each technology offers varying flexibility and advantages. For example, decreasing the bore size of an orifice plate will improve turndown, while also increasing permanent pressure loss.

Reach Out to Our Team of Experts to Help You Find and Understand the Best Flow Meter for Your Application.

Flow Measurement Technology Guide

CONTROL ASSOCIATES

Rosemount™ Magnetic Flow Meter

Primarily used for water applications that require an accurate measurement without a pressure drop.

Rosemount™ Standard Orife Plate

Most commonly used and versatile flow technology. Suitable for high temperature and pressure applications.

Rosemount™ Annubar™ Primary Element

Used for applications that require an accurate measurement with a lower pressure drop. Insertion-style mounting simplifies installation.

Rosemount™ Conditioning Orifice Plate

4-hole design delivers the accuracy and versatility of a standard orifice plate—without the need for significant straight run.

Fox Thermal® Mass Flow Meter

Primarily used in gas applications with low flow rates. Insertion-style mounting simplifies installation.

FLEXIM Clamp-On Ultrasonic Flow Meter

Non-invasive flow meter that can be installed without pipe modification. Suitable for a wide range of applications, including extreme temperatures and low flow rates.

Rosemount™ Vortex Flow Meter

Often used for steam and non-conductive liquids in harsh environments that require an accurate measurement with a lower pressure drop.

Micro Motion® Coriolis Flow & Density Meter

Flow measurement for applications where accuracy is critical. Zero upstream or downstream straight pipe run required. Can also provide mass measurements to operators.

Meter Technology		Magnetic	Vortex	Coriolis	DP: Orifice Plate	DP: Annubar	DP: Conditioning Orifice Plate	Thermal Mass	Clamp-On Ultrasonic
FLUID COMPATIBILITY									
Liquid	Clean, Conductive Liquids	✓	✓	✓	✓	✓	✓	×	✓
	Dirty Liquids	✓	✓	✓	✓	✓	✓	×	✓
	Non-Conductive Liquids	×	✓	✓	✓	✓	✓	×	✓
	High-Viscosity Liquids	✓	✓	✓	✓	✓	✓	×	✓
	Multi-Phase Flow	×	×	✓	×	×	×	×	×
Steam		×	✓	✓	✓	✓	✓	×	✓
Gas		×	✓	✓	✓	✓	✓	✓	✓
MEASUREMENT GOALS									
Accuracy		• •	• •	• • •	• •	• •	• •	•	• •
Low Pressure Drop		• • •	• •	•	•	• •	•	• •	• • •
Turndown/Range		• • •	• •	• • •	•	•	•	• •	• • •
Straight Run Requirement		• •	•	• • •	•	•	• •	•	• •
Mass Flow Rate Capability		✓	✓	✓	✓	✓	✓	✓	✓
Energy Flow Rate Capability		✓	✓	✓	✓	✓	✓	✓	✓
Reverse Flow Capability		✓	×	✓	✓	✓	✓	×	✓
Large Line Size Availability		✓	×	×	✓	✓	✓	✓	✓

✓ = Capable | × = Not Capable | ✓ = Conditional | • = Good | • • = Better | • • • = Best

Measurement Solutions Are Integral to Meeting Business Goals

Control Associates' team has the expertise to help you develop an effective measurement strategy, enabling you to collect the data you need to make good decisions and meet your goals. We help our customers:

- Improve process control stability by improving measurement accuracy
- Identify sustainability improvement opportunities by measuring utility usage
- Improve billing capabilities by improving inventory measurements
- Avoid unplanned shutdowns by predicting equipment failures
- Improve operator safety by enhancing the data from safety systems
- Save time on manual rounds by automating data collection

Our team brings together industry-leading products, a global network of experts, and a dedicated local design and service team to connect our customers with the best measurement solutions available.

About Control Associates

Control Associates is a provider of process control systems, valves, actuation, instrumentation, regulators, relief valves, asset reliability, systems integration, manufacturing execution systems, and data management solutions for industrial and commercial customers in the tri-state metropolitan New York, New Jersey, and Connecticut region. Our unique long-term partnership with Emerson and other leading manufacturers enables us to connect customers with innovative technology, engineering expertise, and 24/7 lifecycle support services to optimize the reliability, safety, profitability, and performance of their operations. Our 40,000 sq ft facility is 20 miles from Manhattan, offering local services and support.

CONTROL ASSOCIATES

20 Commerce Drive,
Allendale, NJ 07401
201. 934.9200
control-associates.com