

# The World Market for Mass Flow Measurement

## Overview



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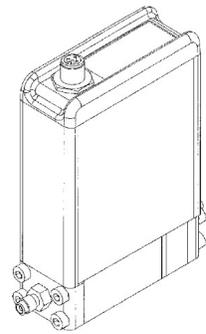
# The World Market for Mass Flow Measurement

Flow Research is publishing a first-ever mass flow study, *The World Market for Mass Flow Measurement*. The study is based on 2025 data on mass flow controllers and Coriolis, thermal, vortex, and differential pressure (DP) flowmeters, including multivariable technologies. Our goal is to give a comprehensive picture of the entire mass flow market.

## Rationale for Study

Mass flow measurement, which measures the weight of a fluid independent of pressure or temperature, is more reliable and offers a higher accuracy and repeatability than volumetric flow, which measures the volume of a gas or liquid occupying a pipe. This difference is particularly important for gases, which shrink or expand in volume with changes in pressure or temperature, but whose mass – the number of molecules – stays constant.

Fortunately, a mass flowmeter can easily provide flows in volume by adding the volume (the pipe diameter) to the calculation. Conversely, some volumetric flowmeters e.g., multivariable vortex and differential pressure flowmeters – can indirectly provide mass flow by also measuring temperature and pressure and computing the mass flow.



*Mass flow controller*

Flowmeters determine mass flow through mounted temperature, pressure, and flow sensors and this equation:  $\text{mass flow} = (\text{mass density} \times \text{volume flow})$ . They determine density by measuring the pressure and temperature of the flow. They determine velocity by a rotating turbine or vortex sensor.

## Study Goals

This executive-level study will determine the size of the entire mass flow market in 2025 and forecast market growth through 2030. Segmentation will include total worldwide market size broken down by eight geographic regions and the basic mass flow technology types: Coriolis, thermal, MFC, and multivariable flowmeters.

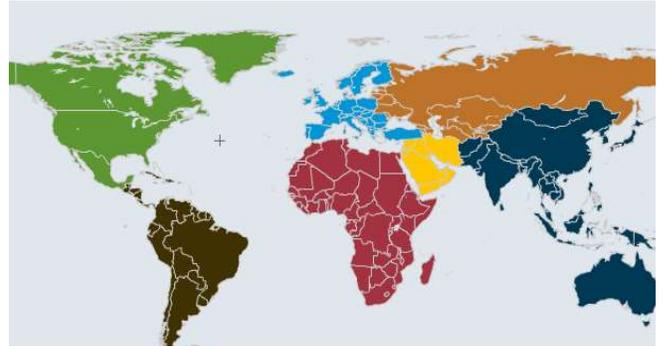
The study has multiple objectives:

- Show worldwide market size and shares for the mass flow market in 2025 for Coriolis, thermal, MFC, and multivariable flowmeters
- Forecast mass flow market growth through 2030
- Share top-level data about each of the types
- Segment data both on a worldwide basis and for each of eight global regions
- Discuss market forces and suggest strategies for selling into the mass flow controller market

## Study Segmentation

### Geographic Regions

- North America
- Western Europe
- Eastern Europe/FSU
- Middle East Africa
- China
- Japan
- Asia/Pacific (without Japan and China)
- Latin America



### Shipments of Mass Flowmeters by Technology Worldwide and by Region

- Coriolis
- Thermal
- Mass Flow Controllers
- Multivariable flowmeters: Differential pressure, vortex, other

### Shipments of Coriolis Flowmeters by Technology Worldwide and by Region

- Single Bent Tube
- Dual Bent Tube
- Single Straight Tube
- Dual Straight Tube
- Other

### Shipments of Mass Flow Controllers by Technology Worldwide and by Region

- Thermal
- Differential Pressure (DP)
- Coriolis
- Ultrasonic

### Shipments of Mass Flow Controllers by Industry Type Worldwide and by Region

- Semiconductor
- Industrial (including industrial process control, research & development)
- By technology: thermal, Coriolis, DP, and ultrasonic

### Thermal Flowmeters by Mounting Type

- Inline
- Single Point Insertion
- Multipoint Insertion

## Flow Research, Inc.

**Flow Research** is the only market research company whose primary mission is to research flowmeter, calibration, level device, and other process control instrumentation markets. Flow Research market research studies can be purchased by anyone interested in the topics. We create these studies through interviews with suppliers, distributors, and end-users. Topics include all of the flowmeter technologies – both new and conventional – as well as pressure transmitters; temperature sensors and transmitters, infrared thermometers and thermal imagers; analytical instrumentation; selected API-certified valves; and studies specifically focused on certain major markets for flowmeters such as the oil and gas markets. Flow Research also started a working group focusing on flowmeter calibration and has completed two studies on flowmeter calibration facilities.



**Dr. Jesse Yoder**

Dr. Jesse Yoder, president, founded Flow Research Inc. in 1998. Dr. Yoder has 35 years of experience as a writer and as an analyst in process control and instrumentation beginning as president and founder of Idea Network. He is the lead analyst for this study. Since 1990, he has written more than 300 market research studies, most of them regarding flow and instrumentation. Dr. Yoder has also written over 300 articles on flow and instrumentation for trade journals. Many can be found at [www.flowresearch.com/articles](http://www.flowresearch.com/articles). He has also given numerous presentations at industry conferences and seminars and done webinars.

Dr. Yoder received a PhD in philosophy from the Univ. of Mass. Amherst in 1984. He has worked as a market analyst for Frost & Sullivan, Find/SVP, Venture Development Corp., and Automation Research Corp. In addition to the years he has spent writing market studies, Dr. Yoder spent 10 years as a technical writer. Almost four years of this were spent writing technical manuals and training guides for the process control division of Siemens. In 1989, he co-founded the Interchange Technical Writing Conference, which he directed for four years. He also taught technical writing at the graduate level at Northeastern University and the University of Massachusetts Lowell. Dr. Yoder spent 10 years as an adjunct philosophy professor at the University of Massachusetts Lowell and Lafayette College.

Dr. Yoder has received two US patents, one in 2015 and one in 2017, for the flowtube meter, a new dual tube/dual sensor method of measuring flow. This meter has two prototypes built and has been tested at CEESI in Nunn, Colorado.

He has also written four books. His first book, *Shades of Experience*, published in 2001, is a book on philosophy, experience and language. Some of its main purposes are to explain the philosophy of viewpoint pluralism, discuss how people can increase their understanding by becoming more aware of previously unnoticed differences in their experience, and examine some of the dynamics of language and ways it can be used as a more powerful descriptive tool. According to viewpoint

pluralism, our knowledge of a subject or object increases as we take additional viewpoints of it. Viewpoint pluralism is a philosophy that underlies the research performed by Flow Research.

His second book, *[The Tao of Measurement, A Philosophical View of Flow and Sensors](#)*, with Richard E. Morley as co-contributor, was published in January of 2015 by the International Society of Automation (ISA). Topics covered include temperature, pressure, flow, time, length, and area. This book looks at the past, present and future of flow, sensors and measurement. It reveals underlying principles of flow, pressure, and temperature products, explains engineering practices, how our units of measurement were derived, present day measurement practices, and how today's scientific tools can improve our units of measurement.

Dr. Yoder has also written a two-book set called *[Advances in Flowmeter Technology](#)* for CRC Press (Taylor & Francis Group) that discusses the history, operating principles, growth factors, representative companies, and frontiers of research for all 10 major types of flowmeters. The first volume is *New-Technology Flowmeters* and the second volume is *Conventional Flowmeters*, both published in 2023.

CRC Press is expected to publish Dr. Yoder's latest book, *Mass Flow Measurement*, in May 2026.

## Staff Profiles

**Belinda Burum**, Vice President, joined Flow Research in 2002. She has worked as a writer and editor in journalism, advertising, and high-tech marketing communications and customer references in the U.S. and Switzerland and is a published author and book editor. At Flow Research, she has been involved with most projects and publications.



**Belinda Burum**



**Leslie Buchanan**

**Leslie Buchanan**, Publication Production Associate and Research Associate, joined Flow Research in March 2010, with skills from a variety of work and life experiences in both the US and abroad. She has been involved in many capacities, including customer contacts and publication formatting.

**Dan Sparks**, Research Director, earned a PhD in chemistry from the University of North Carolina, Chapel Hill. He served as director of product management and director of business development for Omega Engineering in Norwalk, Connecticut until February 2023, and before that was marketing director at Watlow; vice president and general manager at MTS Systems; and engineering director at Thermo Nicolet.

*For more information on Flow Research, please visit our website at [www.flowresearch.com](http://www.flowresearch.com). Please follow us on Facebook, LinkedIn, Twitter, and Instagram. We also invite you to join our Flow Research LinkedIn group.*

## Recent and Currently Scheduled Flow Research Studies

## Websites

### New-Technology Flowmeter Studies

#### Mass Flowmeter Series

The World Market for Mass Flow Measurement (Core Study)	
The World Market for Coriolis Flowmeters, 8 <sup>th</sup> Edition	<a href="http://flowresearch.com/coriolis">flowresearch.com/coriolis</a>
The World Market for Thermal Flowmeters, 3 <sup>rd</sup> Edition	<a href="http://flowresearch.com/thermal">flowresearch.com/thermal</a>
The World Market for Mass Flow Controllers, 4 <sup>th</sup> Edition	<a href="http://flowresearch.com/mfc">flowresearch.com/mfc</a>
The World Market for Magnetic Flowmeters, 8 <sup>th</sup> Edition	<a href="http://flowresearch.com/mag">flowresearch.com/mag</a>
The World Market for Ultrasonic Flowmeters, 8 <sup>th</sup> Edition	<a href="http://flowresearch.com/ultrasonic">flowresearch.com/ultrasonic</a>
The World Market for Vortex Flowmeters, 8 <sup>th</sup> Edition	<a href="http://flowresearch.com/vortex">flowresearch.com/vortex</a>
The World Market for Multiphase Flowmeters, 2 <sup>nd</sup> Edition	<a href="http://flowresearch.com/multiphase">flowresearch.com/multiphase</a>
Multiphase: Module A: The World Market for Watercut Meters	<a href="http://flowresearch.com/multiphase">flowresearch.com/multiphase</a>

### Conventional Flowmeter Studies

The World Market for Pressure Transmitters, 5 <sup>th</sup> Edition	<a href="http://flowresearch.com/pressure">flowresearch.com/pressure</a>
The World Market for Primary Elements, 2 <sup>nd</sup> Edition	<a href="http://flowresearch.com/flowplate">flowresearch.com/flowplate</a>
The World Market for Positive Displacement Flowmeters, 3 <sup>rd</sup> Edition	<a href="http://flowresearch.com/pd">flowresearch.com/pd</a>
The World Market for Turbine Flowmeters, 3 <sup>rd</sup> Edition	<a href="http://flowresearch.com/turbine">flowresearch.com/turbine</a>
The World Market for Variable Area Flowmeters	<a href="http://flowresearch.com/va">flowresearch.com/va</a>

### Cross-Technology Flowmeter Studies

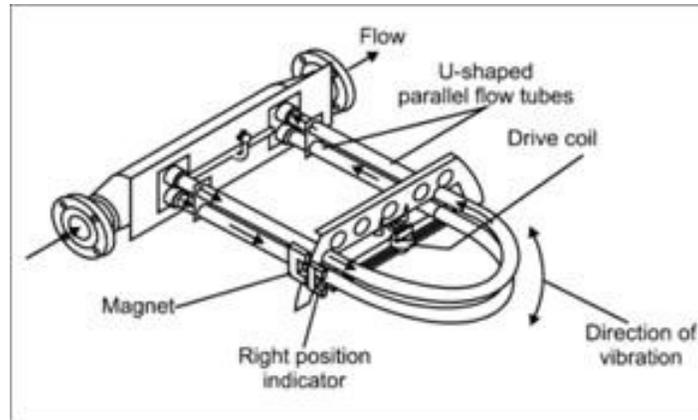
Volume X: The World Market for Flowmeters, 9 <sup>th</sup> Edition	<a href="http://flowresearch.com/volumex">flowresearch.com/volumex</a>
Volume X: Module A: Strategies, Industries, and Applications	<a href="http://flowresearch.com/volumex">flowresearch.com/volumex</a>
The World Market for Gas Flow Measurement, 4 <sup>th</sup> Edition	<a href="http://www.gasflows.com">www.gasflows.com</a>
Gas Module A: Applications & Strategies for Gas Flow Measurement	<a href="http://flowresearch.com/gasflow">flowresearch.com/gasflow</a>
Gas Module B: Natural Gas Production, Consumption, and Flow Measurement in the Oil & Gas Industry	<a href="http://flowresearch.com/gasflow">flowresearch.com/gasflow</a>
Flowmeters in the Oil & Gas Industry	<a href="http://flowresearch.com/oilflow">flowresearch.com/oilflow</a>

### Flow Calibration Studies

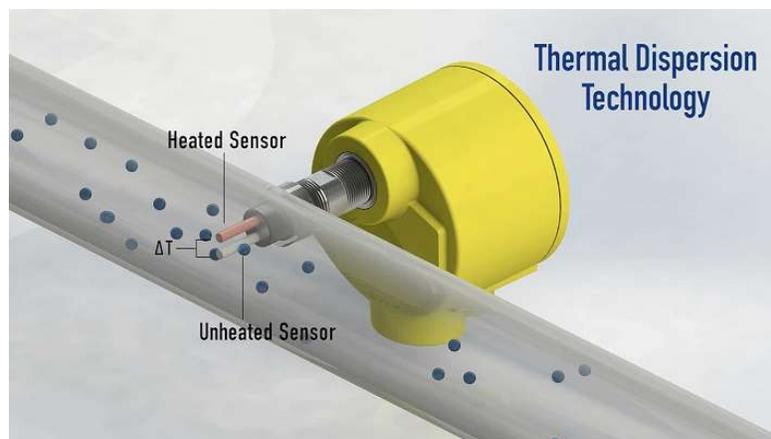
Worldwide Flowmeter Calibration Facilities and Markets	<a href="http://flowresearch.com/calibration">flowresearch.com/calibration</a>
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### Temperature

Market for Temperature Sensors in the Americas, 3<sup>rd</sup> Edition history, operating principles, growth factors, representative companies, and frontiers of research for all 10 types of flowmeters. The first volume, *New-Technology Flowmeters*, published September 6, 2022, was followed by *Conventional Flowmeters* on December 15.



*Coriolis flowmeter*



*Thermal mass flowmeter technology  
(Graphic courtesy of Fluid Components International)*

### **Flow Research Gold Partner Program: *Your input, please***

Make sure this study meets your needs by telling us what you think about our scope and segmentation. By becoming a Gold Partner, you can also enjoy a significant discount on the regular price of the study.

Being a Gold Partner requires making an early commitment to purchase the study, but you can make payments either in one amount at the beginning of the study or split into two, with the second payment due upon delivery of the study. For more details, please contact Jesse Yoder at +1 781 245-3200, or [jesse@flowresearch.com](mailto:jesse@flowresearch.com).

*We look forward to working with you.*

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### Why Flow Research? Because we . . .

- Are the only company whose sole focus is the flowmeter instrumentation market
- Research all new-technology and conventional flowmeters
- Contact every known supplier
- Offer our studies in both electronic and color-printed hardcopy versions
- Draw on flowmeter data dating back to 1992, when we began actively following the market