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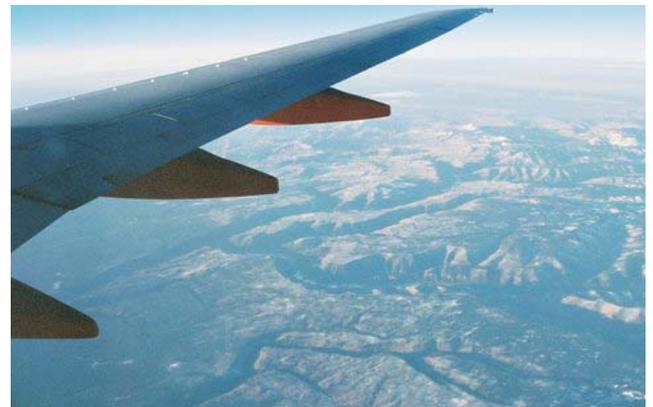
## **Volume X: The World Market for Flowmeters, 2<sup>nd</sup> Edition**

Flow Research presents a new market study on the worldwide flowmeter market. This study has determined the 2007 market size of the worldwide market for all flowmeter technologies. In addition, this 600+ page, full-color study includes:

- Market size forecasts for each flowmeter type through 2012
- Market shares for each flowmeter type in 2007 with annual forecasts through 2012
- A technology description and analysis for each flowmeter type, including major competitive strengths and weaknesses
- A product line analysis for all of the major manufacturers of each technology type
- Informative selling strategies for those already in a market segment, or planning to enter one

### ***What else might interest me?***

We've divided the market into its three basic categories: new-technology, traditional technology, and emerging technology. From there, we've looked at each of the flowmeter technologies individually. We applied our paradigm case method of analysis, and determined the most suitable applications for each flowmeter type - and backed up our findings using our customer survey results, extensive supplier questionnaires, and other elements of our long-term involvement in the industrial process instrumentation field.



*The view from 20,000 feet*

### ***Anything else?***

Our clients have told us what product segmentation is most important to them for each technology. We've listened to what they have to say, and made sure our research results cover all of the most important elements of each flowmeter market segment.

For example, the Coriolis chapter gives you the breakdown between straight tube and bent tube devices, between smart and conventional types, and the major manufacturers who supply into the liquid, gas, and steam markets - and more. You'll learn how the magnetic market is divided between wafer, flanged, and insertion types, and how the ultrasonic market is split among transit time, Doppler, and the emerging hybrids. All flowmeter technologies are treated in similar detail.

### ***What are these new-technologies and traditional technologies?***

Our research shows that the 2007 global market for flowmeters is just over US\$4.5 billion. That's a big market! In order to make this market more understandable, we have divided it into three segments. These segments are:

- New-Technology Flowmeters
- Traditional Technology Flowmeters
- Emerging Technology Flowmeters

Listed below are these three categories and the flowmeter technologies found within each segment:



*Taking a closer look*

<b>New-Technology Flow</b>	<b>Traditional Technology Flow</b>	<b>Emerging Technology Flow</b>
<ul style="list-style-type: none"> <li>• Coriolis</li> <li>• Magnetic</li> <li>• Ultrasonic</li> <li>• Vortex</li> <li>• Thermal</li> </ul>	<ul style="list-style-type: none"> <li>• DP Flow</li> <li>• Primary Elements</li> <li>• Positive Displacement</li> <li>• Turbine</li> <li>• Open Channel</li> <li>• Variable Area</li> <li>• Target</li> </ul>	<ul style="list-style-type: none"> <li>• Sonar</li> <li>• Optical</li> </ul>

Over the years, Flow Research has conducted individual studies of each of these technologies. The [\*\*\*World Market for Flowmeters\*\*\*](#) contains updated 2007 data for each flowmeter type. Our method has always been to use a bottom-up approach to analyzing any market. In this way, we are able to both confirm what we believe we already know as well as discovering important new trends. Our long term success is based upon the identifying what is new and comparing this information with our long term knowledge of the market under study. We report all of our findings to you.

#### **Key Issues Addressed**

- Growth in the ultrasonic market, especially in custody transfer applications
- Comparison of DP flowmeters and primary elements to other flowmeter markets
- Impact of the expanding oil & gas industries on the flowmeter markets
- Effects of growth in China, India, and other developing countries on global markets
- Continued expansion of magnetic and vortex flowmeter opportunities and markets
- Impact of new-technology flowmeters on the turbine and positive displacement markets
- Continued growth of the Coriolis flowmeter market
- Mergers and acquisitions in the worldwide flowmeter market
- Impact of new standards, such as the new API standard for vortex in custody transfer

**Valuable supplier information included!**

This study includes company profile information of all of the major suppliers into each of the individual flowmeter markets. In addition, each flowmeter chapter includes a product analysis, manufacturer by manufacturer, that allows you to quickly compare the product lines of all major suppliers. There is no other report available today with this critical information combined into a single comprehensive view of the market.

The company profiles include important data such as contact information, revenues, product lines, company history, recent acquisition activity, and sales strategies. Each company's flowmeter product line is summarized in easy-to-read charts which include Series and Model names and designations. Sale strategies include descriptions of operating geographies, and the strengths and weaknesses of the firm's product offering within the context of their market.

**Strategies**

Company strategies are provided that apply to the entire flowmeter market, and to individual product lines. Tactical and strategic recommendations are included for all suppliers to each market segment. A worldview of the market captures the best forecasts for future growth.

Please review the following pages for a more complete look at exactly what this new study contains, and how this study can help your business succeed.

**Background of Study**

The worldwide flowmeter market has changed substantially since the first edition of this study was published in 2003. While 2003 was a down year for many companies, the flowmeter market began improving in the fourth quarter of that year. The last four years, 2004-2007, have been years of significant growth for the worldwide flowmeter market. Growth in the energy markets and demand for instrumentation from China and India are some of the reasons for this growth. In addition, suppliers have released a steady stream of new products, especially for "new-technology" flowmeters. It was time to take a new look at the worldwide flowmeter market in 2007, to determine the amount of growth that has occurred, and to see how the different technologies compare with each other today.

**Rationale for Study**

Since completing our first worldwide flowmeter market study in 2003, we have been following this market very closely. Many developments have been described in our quarterly reports, the *Market Barometer* and *Energy Monitor*. Each issue of the Market Barometer includes an update on the market for each type of flowmeter. This new study builds on the knowledge we have gained over the years, since the 2003 edition, but it is a completely new look at this market. (For more information on the Market Barometer, go to [www.worldflow.com](http://www.worldflow.com).)

### Geographic Segmentation:

- North America
- Europe (including Central Europe and FSU)
- Japan
- Asia without Japan
- Rest of World (Latin America, Africa, Middle East)

### New-Technology Flowmeter Segmentation:

#### Coriolis Flowmeters

- Product Analysis
- Geographic Breakout Worldwide and by Region
- Market Size in Dollars and Units
- Bent Tube vs. Straight Tube
- Liquid, Steam, and Gas
- Market Shares

#### Magnetic Flowmeters

- Product Analysis
- Geographic Breakout Worldwide and by Region
- Market Size in Dollars and Units
- Wafer, Flanged, and Insertion
- Market Shares

#### Ultrasonic Flowmeters

- Product Analysis
- Geographic Breakout Worldwide and by Region
- Market Size in Dollars and Units
- Transit Time, Doppler, and Hybrid
- Liquid, Steam, and Gas
- Market Shares

#### Vortex Flowmeters

- Product Analysis
- Geographic Breakout Worldwide
- Market Size in Dollars and Units
- Liquid, Steam, and Gas
- Market Shares



*Dr. Yoder gets into his work!*



*Dr. Yoder visits a flow calibration lab.*

### Thermal Flowmeters

- Product Analysis
- Geographic Breakout Worldwide
- Market Size in Dollars and Units
- Liquid and Gas
- Market Shares

### What's in this for my company?

- See the emerging applications and where the growth is
- Understand world and regional markets
- Get to know your real competition
- Learn what other suppliers manufacture, where, and for whom
- The best information creates the best decisions

### Traditional Technology Flowmeter Segmentation

#### DP Flow Transmitters and Primary Elements

- Product Analysis
- Geographic Breakout Worldwide and by Region
- Market Size in Dollars and Units
- DP Flow Transmitters and Primary Elements
- Multivariable, Single Variable
- Market Shares

#### Positive Displacement Flowmeters

- Product Analysis
- Geographic Breakout Worldwide and by Region
- Market Size in Dollars and Units
- Water, Gas, Oil, Industrial Liquids
- Market Shares

#### Turbine Flowmeters

- Product Analysis
- Geographic Breakout Worldwide and by Region
- Market Size in Dollars and Units
- Water, Gas, Oil, Industrial Liquids, Steam
- Market Shares



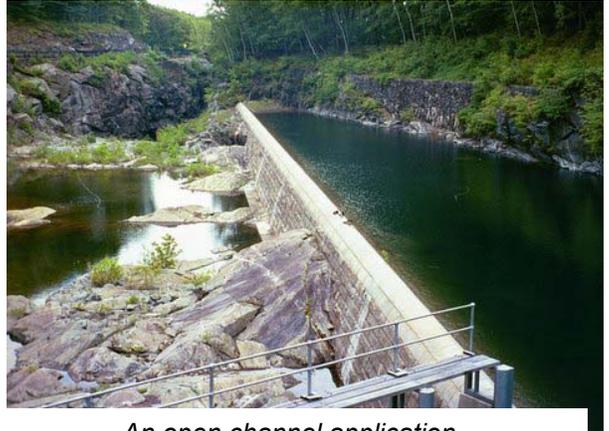
*An oil pump jack at work in the field*

### Open Channel Flowmeters

- Product Analysis
- Geographic Breakout Worldwide and by Region
- Market Size in Dollars and Units
- Market Sharew

### Variable Area Flowmeters

- Product Analysis
- Geographic Breakout Worldwide
- Market Size in Dollars and Units
- Liquid, Gas, and Steam
- Market Shares



*An open channel application*

### Target Flowmeters

- Product Analysis
- Geographic Breakout Worldwide
- Market Size in Dollars and Units
- Liquid, Gas, and Steam
- Market Shares

### Emerging Technology Flowmeter Segmentation

#### Sonar Flowmeters

- Product Analysis
- Geographic Breakout Worldwide and by Region
- Market Size in Dollars and Units
- Market Shares



*Flow can take many forms*

#### Optical Flowmeters

- Product Analysis
- Geographic Breakout Worldwide and by Region
- Market Size in Dollars and Units
- Market Shares

## **Background: Flow Research, Inc.**

Dr. Jesse Yoder is President of Flow Research Inc., a company he founded in 1998. Dr. Yoder has 20 years' experience as a writer and analyst in process control and instrumentation. Since 1990, he has written more than 100 market research studies, most of them in the area of flow and instrumentation. Some of the recent and currently scheduled Flow Research studies are as follows:

- [Volume I: The World Market for Coriolis Flowmeters, 3<sup>rd</sup> Edition](#) (2008)
- [Volume II: The Global Market for Magnetic Flowmeters, 3<sup>rd</sup> Edition](#) (September 2005)
- [Volume III: The World Market for Ultrasonic Flowmeters, 3<sup>rd</sup> Edition](#) (January 2008)
- [Volume IV: The World Market for Vortex Flowmeters, 3<sup>rd</sup> Edition](#) (March 2006)
- [Volume V: The World Market for DP Flowmeters and Primary Elements](#) (January 2007)
- [Volume VI: Worldwide Survey of Flowmeter Users, 2<sup>nd</sup> Edition](#) (January 2006)
- [Volume VII: The World Market for Positive Displacement Flowmeters](#) (2002)
- [Volume VIII: The World Market for Turbine Flowmeters](#) (2002)
- [Volume IX: The World Market for Pressure Transmitters, 2<sup>nd</sup> Edition](#) (July 2007)
- [Volume X: The World Market for Flowmeters \(includes all flow technologies\)](#) (April 2008)
- [Volume XI: The World Market for Gas Flow Measurement](#) (September 2004)
- [Volume XII: The World Market for Steam Flow Measurement](#) (March 2008)
- [Volume XIII: The World Market for Mass Flow Controllers](#) (September 2007)
- [The Market for Temperature Sensors in the Americas, 2<sup>nd</sup> Edition](#) (May 2006)
- [The Market for Temperature Transmitters in the Americas, 2<sup>nd</sup> Edition](#) (November 2006)
- [The World Market for DP Flow Transmitters](#) (September 2007)
- [The World Market for Primary Elements](#) (September 2007)

These studies are further described at [www.flowresearch.com/flow.htm](http://www.flowresearch.com/flow.htm)

Dr. Yoder has also written more than 70 articles on flow and instrumentation for trade journals. Links to many of these can be found at [www.flowresearch.com/articles.htm](http://www.flowresearch.com/articles.htm).

Norm Weeks, Market Analyst, joined Flow Research in November 2004 after a 24-year stint with Verizon. At Verizon, Norm specialized in creating innovative customer solutions, product management, and product marketing. He is now a fulltime market analyst for Flow Research, and has already completed several studies.

Belinda Burum, Vice President and Editor, has worked in high tech for 16 years as a technical writer and marketing communications manager. She joined the company in 2002, and has since

then worked on many projects. She is a very talented writer, and has a strong customer focus. In addition to her work on market studies, Belinda also serves as associate editor of the *Market Barometer* and *Energy Monitor*.

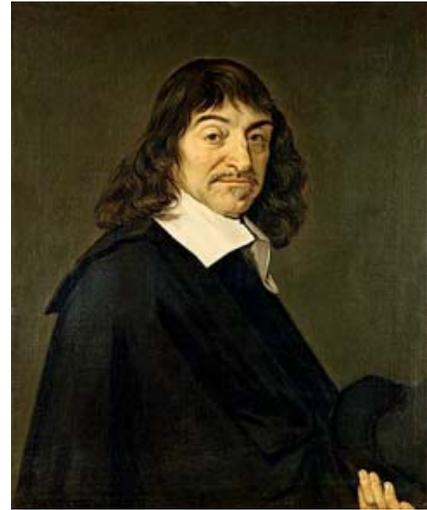
Besides writing and publishing studies of this type, Flow Research specializes in user surveys that include a detailed analysis of customer perceptions. In addition, Flow Research provides quarterly updates on the flow and energy industries in the **Market Barometer** and the **Energy Monitor**. The **Energy Monitor** analyzes the current state of the oil & gas, refining, power, and renewables industries, and the implications for instrumentation supplier. Both reports are part of the Worldflow Monitoring Service. More details are available at [www.worldflow.com](http://www.worldflow.com).

For more information on Flow Research, please visit our website at [www.flowresearch.com](http://www.flowresearch.com), or call us at [1] 781 246-4949.

The following table lists some of the companies profiled in this study.

### Major Companies Profiled in Study

- |  |                                 |
|--|---------------------------------|
| • ABB                                      | • McCrometer                    |
| • Bopp & Reuther Messtechnik GmbH          | • Oval Corp.                    |
| • Elster-Instromet                         | • Racine Federated              |
| • Emerson Process Management               | • SICK MAIHAK                   |
| - Bristol Division                         | • Siemens                       |
| - Micro Motion                             | • Sierra Instruments            |
| - Rosemount Division                       | • Smar Equipamentos Industriais |
| • Endress+Hauser                           | • Solartron ISA                 |
| • Foxboro (Invensys Process Systems group) | • Spirax Sarco                  |
| • Fuji Electric                            | • Spirax Sarco - EMCO Division  |
| • GE Sensing                               | • Tokyo Keiso                   |
| • Honeywell                                | • Yamatake                      |
| • KROHNE                                   | • Yokogawa                      |



René Descartes

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## The Flow Research Founding Sponsor Program

To produce studies that most closely match our clients' needs, Flow Research instituted the Founding Sponsor Program. This program enables companies who wish to participate at a high level in a study's research to influence its scope and segmentation. In addition, Founding Sponsors receive regular updates from Flow Research on study progress, and receive a significant discount on the standard retail of the study.

Procedure: Early in the planning phase of a study, Founding Sponsors receive a proposal that includes the proposed segmentation. Founding Sponsors can propose additional segmentation, and can also suggest changes to the proposed segmentation. While the decision to adopt particular segmentation ultimately lies with Flow Research, and is based on input from all contributors, we will do our best to accommodate the specific needs of each of our clients.

During the research phase of a study, Flow Research will issue regular reports that provide updates on the progress of the research. These reports will be sent to Founding Sponsors, who are then invited to provide any additional input or comments into the study.

Being a Founding Sponsor requires making an early commitment to purchase the study. However, in return, Founding Sponsors receive a significant discount off the regular price of the study. Payment can be made 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 additional details, or to find out how the Founding Sponsor program applies to any particular study, please contact Flow Research. We look forward to working with you!

If you have any questions about the Founding Sponsor program, please contact Norm Weeks at (781) 245-3200, or [norm@flowresearch.com](mailto:norm@flowresearch.com).

# The World Market for Flowmeters, 2<sup>nd</sup> Edition



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## Why Flow Research?

- We specialize in flowmeter markets and technologies
- We have researched all flowmeter types
- We study suppliers, distributors, and end-users
- Our worldwide network of contacts provides a unique perspective
- Our mission is to supply the data to help your business succeed