

Flow Study Overview Volume X



Flow Research, Inc.

Wakefield, Massachusetts

USA



Flow Research, Inc.
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Flow Research Services

Flow Research conducts **market research studies** in a wide variety of areas that can be purchased by anyone interested in the topics. We create these studies through interviews with suppliers, distributors, and end-users. Topics include Coriolis, magnetic, ultrasonic, vortex, positive displacement, and turbine flowmeters, as well as temperature sensors, temperature transmitters, infrared thermometers and thermal imagers, and pressure transmitters.

We also conduct **custom projects** for companies who are looking to expand their product line, merge with or acquire another company, or understand their customer needs better. We are very experienced at doing user surveys that reveal hidden problems, emerging applications, and new product requirements. We gather the data and analyze it in light of our wealth of data on instrumentation. We then formulate strategies that help you achieve your goals.

In addition to studies and projects, we publish periodicals as part of our **Worldflow Monitoring Service**. The *Worldflow Barometer* helps companies stay on top of trends and technologies and interpret them so that they can make better business decisions. Our new *Worldflow Energy Monitor* – an outgrowth of the *Worldflow Process Industry Monitor* – focuses on developments in oil & gas, petrochemical, and renewable energy industries. It also reflects our increasing **focus on the oil and gas flow markets**. As part of the Worldflow Monitoring Service, we also produce periodic *Worldflow User Perspective* reports and timely *Flash Reports*.

Flow Research specializes in instrumentation. We work with companies individually to **formulate strategies** that will help them compete in an increasingly competitive world. Dr. Jesse Yoder, founder of Flow Research, has been working in process control since 1986 and writing market research studies since 1990. He and his team have studied hundreds of companies during this time and have advised most of the top flowmeter suppliers on market and product strategies.

Dr. Yoder has written over 100 market studies since 1990 and more than 70 technical articles on instrumentation published in industry journals, most of which can be found online at www.flowresearch.com/articles.htm. Consult www.flowresearch.com for a current list of our off-the-shelf studies available for immediate delivery.

Worldflow Monitoring Service

Flow Research began the Worldflow Monitoring Service in 2002 as a way to keep you updated between flow studies. The Worldflow Monitoring Service consists of the following quarterly publications:

- Worldflow Barometer
- Worldflow Energy Monitor

The cover of the Worldflow Barometer publication features the Flow Research logo at the top left, with contact information: 27 Water Street, Wakefield, MA 01880, (781) 245-3200, and (781) 224-7552 (fax). A blue banner at the top reads "A STEADY STREAM OF DATA IS COMING YOUR WAY". Below this, the title "worldflow barometer" is written in red. A black and white portrait of a man is on the left, and a photograph of a boat on a river is on the right. At the bottom left is a circular barometer. The text describes the publication as a component of Worldflow that focuses on the flowmeter industry, highlighting important events and providing information for forecasts and budget decisions. The Flow Research logo and website URL (www.flowresearch.com) are at the bottom.

The cover of the Worldflow Energy Monitor publication features a blue banner at the top with the text "A STEADY STREAM OF DATA IS COMING YOUR WAY". The title "worldflow energy monitor" is prominently displayed. A photograph of an oil rig is on the right. Below the title, the industries "Oil & Gas", "Refining & Petrochemical", and "Power & Renewables" are listed, along with the issue date "Q3 2005". A black and white portrait of a man is on the left. The text describes the publication as a quarterly spotlight on the oil & gas, refining & petrochemical, and power & renewables industries, highlighting important events and providing information for forecasts, marketing, and decision-making. The Flow Research logo and website URL (www.flowresearch.com) are at the bottom.

The Worldflow Barometer keeps you up-to-date on new products and changes within the flowmeter industry. The Energy Monitor is focused on the energy industries:

- Oil & Gas Production, Exploration, and Distribution
- Refining & Petrochemical
- Power & Renewables

In addition we do periodic Worldflow User Perspective surveys that keep you posted on changes in customer preferences and decision-making patterns.

Please use the E-Z Faxback Response Form on the other side of this page if you would like more information about our Worldflow Monitoring Service, or about any of our other studies. And thank you for your interest!



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Flow Study Overview

This Study Overview contains overviews of the following Flow Research study, which is currently in progress:

- Volume X: The World Market for Flowmeters, 2nd Edition
(<http://www.flowresearch.com/flow.htm>)

In also includes information on the following Flow Research service:

- Worldflow Monitoring Service (www.worldflow.com)

Complete ordering information is at the back of this Study Overview. Thank you for your interest in our studies!

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



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June 20, 2007

A Proposal for a Market Research Study on the Worldwide Flowmeter Market

Flow Research is proposing a new market study on the worldwide flowmeter market. The study will be conducted by Flow Research. The primary goal is to determine the size of the worldwide flowmeter market in 2007. In addition, forecasts through 2012 will be included. The study will be called **The World Market for Flowmeters, 2nd Edition**.

The View from 20,000 Feet

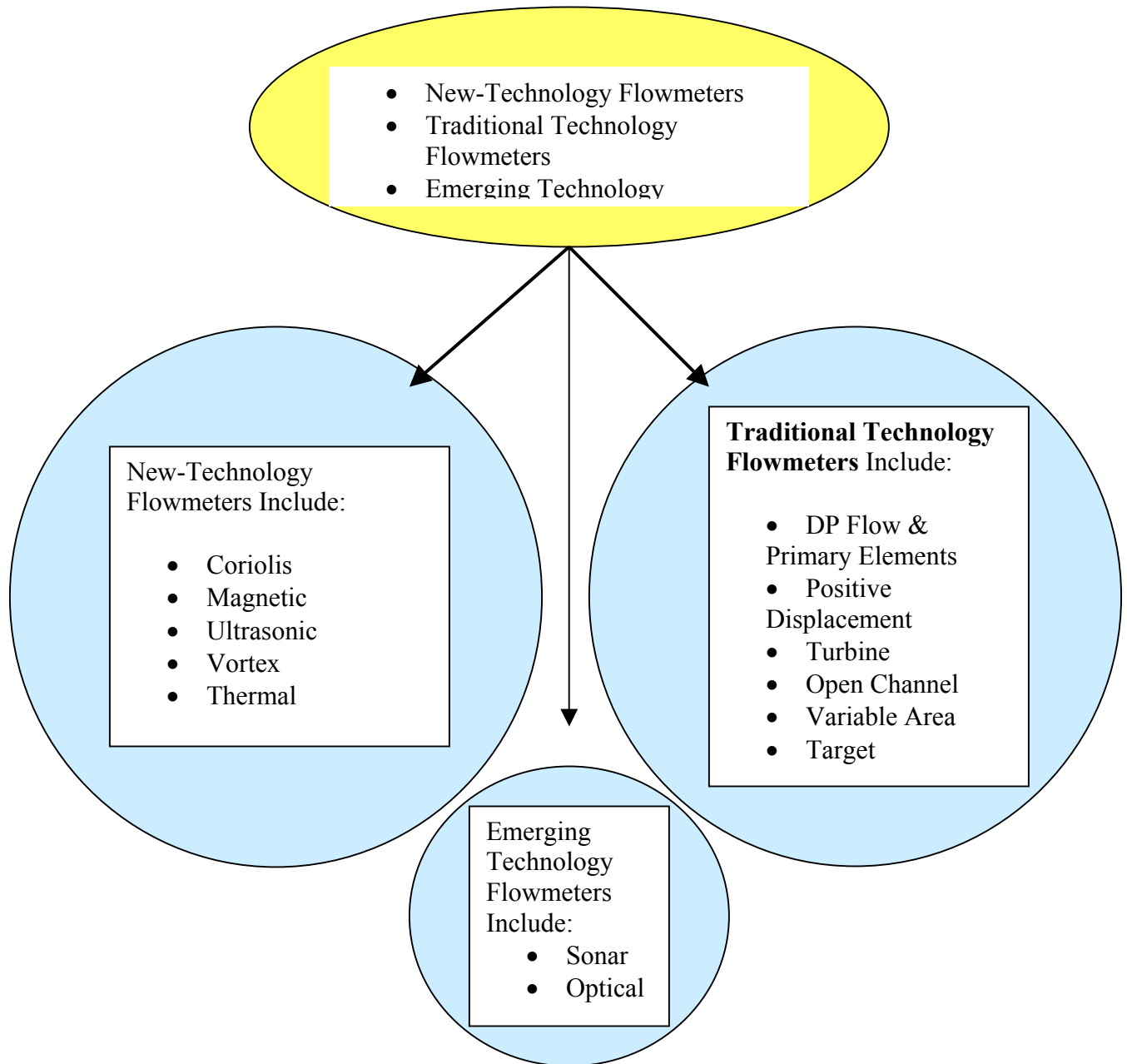


The study has multiple purposes:

- To determine worldwide market size and market shares for all types of flowmeters in 2007
 - To forecast market growth for all types of flowmeters through 2012
 - To determine the breakout of liquid, gas, and steam for individual flow technologies
 - To provide a product analysis for the main companies selling into the flowmeter market
- To provide strategies to manufacturers for selling into the flowmeter market
 - To provide company profiles of the main suppliers of flowmeters.

One main goal of this study is to determine the size of the flowmeter market worldwide in 2007. We will approach this subject from the bottom up by analyzing the market size for each type of flowmeter, and then totaling these into the size of the entire flowmeter market.

This study divides the flowmeter market by technology into three types:



Flow Research has conducted or is conducting in-depth individual market studies on many of these flow technologies, including Coriolis, magnetic, ultrasonic, vortex, and DP flow and primary elements. We already have up-to-date data for most of these technologies. We will obtain the updated information for the remaining technologies, including positive displacement and turbine flowmeters. The result will be a completely up-to-date analysis of the worldwide flowmeter market for 2007.

The last time we performed such a comprehensive analysis was in February 2003, for the first edition of this study. That study was a great success, and we expect even better results for the second edition.

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 three years, 2004, 2005, and 2006, 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 is 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 stack up against each other.

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 report, the **Market Barometer**. 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.

Key Issues Addressed

This study will address the key issues in the worldwide flowmeter market, including:

- Growth in the ultrasonic flowmeter market, especially the market for custody transfer of natural gas
- Continued growth in the Coriolis flowmeter market
- Comparison of the DP flowmeter and primary elements market to other flow markets
- The impact of the expanding oil & gas and energy industries on the flowmeter market
- The effect of growth in China, India, and other developing countries on the worldwide flowmeter market
- Continued expansion of the magnetic and vortex flowmeter markets
- The impact of new-technology flowmeters on the positive displacement and turbine flowmeter markets
- Mergers and acquisitions in the worldwide flowmeter market
- The impact of new standards, such as the new American Petroleum Institute (API) standard for vortex flowmeters used in custody transfer

Proposed Segmentation

The proposed segmentation for this study is as follows.

Geographic Segmentation:

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

New-Technology Flowmeters

Coriolis Flowmeters

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

Magnetic Flowmeters

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

Ultrasonic Flowmeters

- Product Analysis
- Geographic Breakout Worldwide
- 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
- Multivariable, Smart, and Conventional
- Liquid, Steam, and Gas
- Market Shares

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 Flowmeters

DP Flow and Primary Elements

- Product Analysis
- Geographic Breakout Worldwide
- Market Size in Dollars and Units
- DP Flow Transmitters and Primary Elements
- Liquid, Steam, and Gas
- Market Shares



Positive Displacement Flowmeters

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

Turbine Flowmeters

- Product Analysis

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

Open Channel Flowmeters

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

Variable Area Flowmeters

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

Target Flowmeters

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

Emerging Technology Flowmeters

Sonar Flowmeters

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



Optical Flowmeters

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

Strategies

Company Profiles

Publication Date

The target date for publication of this study is February 2008.

Founding Sponsorship

We are offering the opportunity for companies to become Founding Sponsors for this study. Benefits of being a Founding Sponsor include being able to participate in determining study scope and direction, being sent regular updates on study progress, and receiving a favorable discount pricing package. The Founding Sponsor program is explained on page nine. We hope you will decide to become a Founding Sponsor for this study.

Please review the above segmentation and let us know if there is any additional segmentation you would like to see, or if you would like to propose changes to the existing segmentation.

Thank you in advance for your input, and we hope to hear from you!

Background

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:

How will the Founding Sponsor Program help me?

- You can have your specific data requirements included in the study
- You help determine the scope and final objectives
- You receive periodic updates as the research progresses
- You are among the first to receive final study results
- You receive favorable pricing and other purchase terms

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

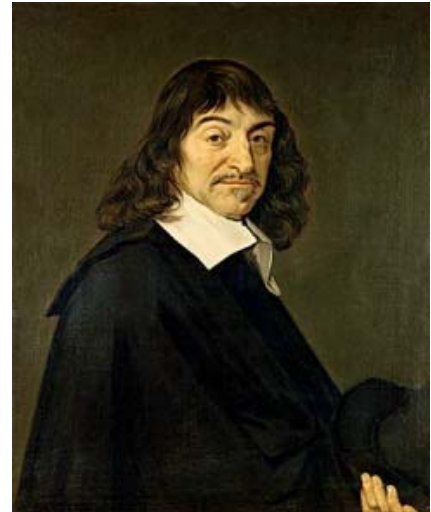
These studies are described at <http://www.flowresearch.com/flow.htm>

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 <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 is serving as associate editor of the **Market Barometer** and the **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. For more information on Flow Research, please visit our website at www.flowresearch.com.



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.

The World Market for Flowmeters, 2nd 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

Worldflow Monitoring Service

The *Worldflow Monitoring Service* is a package of resources designed to serve the information needs of flowmeter and instrumentation manufacturers, distributors, and end-users. Each component of the Service offers timely data, meaningful news, and insightful commentary on the markets it covers. Each complements and updates the studies that Flow Research regularly conducts in the same markets, and keeps readers informed of events and trends in their industry. *Worldflow*, which was initiated in 2002, has four components:

Market Barometer (MB) (40–60 pages)

This quarterly publication focuses on the flowmeter industry. *MB* reports on important technology introductions, company events such as mergers or acquisitions, application trends, and product and marketing adaptations. The “State of the Industry” section highlights recent industry events and their meaning. “Company Korner” provides an in-depth look at one or more companies. And, in every issue, we review each flowmeter technology and interpret changes, giving you the information and ideas you need to implement winning product strategies and to make more informed decisions. Your subscription includes *Flash Reports*, a PDF file of each issue, and two printed and bound hardcopy volumes.

Energy Monitor (EM) (40–70 pages)

This quarterly publication focuses on the oil & gas, refining & petrochemical, and power and renewable industries in relation to flow and temperature measurement, as well as other instrumentation. Each issue surveys the energy scene to discover significant new events, trends, and opportunities. Changes in the energy sector are accelerating, and *EM* seeks to identify and interpret them for those in the flow, pressure, and temperature measurement businesses who seek to understand them and who want to establish a solid knowledge base for action. Each issue is packed with what you need to know. Your subscription includes *Flash Reports*, a PDF file of each issue, and two printed and bound hardcopy volumes.

Flash Reports (2–6 pages each)

Just as the *Worldflow Monitoring Service* informs during the interval between market studies, *Flash Reports* activate as soon as important news breaks. Flow Research senses the pulse of the industry through regular interviews and conversations with key personnel, routine end-user surveys, and memberships on multiple press release lists. When news occurs, we are often among the first to hear it, and we let you as a subscriber know about it right away. *Flash Reports* include both the key facts and a “What it Means” section. Subjects of *Flash Reports* sent out recently include Siemens’ purchase of Controlotron, the API formulation of standards for vortex flowmeters, and Nu-Flo’s acquisition of Caldon.

Living Database (LD) (24/7 access)

This web-based tool is an instant library of information for anyone who wants to know everything from how to select a flowmeter to what flowmeters are available worldwide and from whom. A centralized database with subscriber access via user name and password, *LD* is the way to conveniently locate information from past reports and articles, and to keep current on new products and applications. Better data = better decisions.

EZ Faxback Order Form

Worldflow Monitoring Service

It's easy to order **The Worldflow Monitoring Service!** You can:

- 1) Fill out this form and fax it to Flow Research at (781) 224-7552.
- 2) Email your order with the information below to jesse@flowresearch.com.
- 3) Mail a check payable to Flow Research with this order form to the address below.
- 4) Call us at (781) 245-3200.

- Yes! We'd like to order the **Market Barometer (MB)** at the Special New Subscriber Rate of \$2,350 per year. (Regular Rate: \$2,750 **Savings: \$400**). The Quarterly Rate is \$595.
- Yes! We'd like to order the **Energy Monitor (EM)** at the Special New Subscriber Rate of \$1,650 per year. (Regular Rate: \$1,750 **Savings: \$100**). The Quarterly Rate is \$425.
- Yes! We'd like to order the **Living Database (LD)** at the Special New Subscriber Rate of \$1,250 per year. (Regular Rate: \$1,500 **Savings: \$250**). The Quarterly Rate is \$325.
- Yes! We'd like the full **Worldflow Monitoring Service** at the Special New Subscriber Rate of \$3,800 per year. (Regular Rate: \$6,000 **Savings: \$2,200**). The Quarterly Rate is \$975.
The full Service includes the **Market Barometer**, the **Energy Monitor**, and all **Flash Reports**.
*In addition to the overall savings, we will also receive unlimited access to the **Living Database**.*
- We prefer to pay quarterly.** Please bill us quarterly as specified below.
- FREE OFFER!** We'd like a **free trial subscription** to the **Worldflow Monitoring Service** at no charge. We will receive one issue each of the **Market Barometer** and **Energy Monitor**, plus Flash Reports. We have the right to cancel at any time during the free trial.

To order any of the above, fill out the bottom of this form and email, fax, or mail it to Flow Research, or simply give us a call. *No matter which option you choose, we appreciate your business!*

<p>Name: _____</p> <p>Title: _____</p> <p>Company: _____</p> <p>Email: _____</p> <p><input type="checkbox"/> Check Enclosed Amount \$ _____</p> <p><input type="checkbox"/> Purchase Order PO#: _____</p> <p><input type="checkbox"/> Bill my company</p> <p>Tel: _____ Fax: _____</p>	<p>Street: _____</p> <p>City: _____ State: _____</p> <p>ZIP: _____ Country: _____</p> <p><input type="checkbox"/> VISA <input type="checkbox"/> Master Card <input type="checkbox"/> AM EX</p> <p>Account Number: _____</p> <p>Expiration Date: _____</p> <p>Name on Card: _____</p> <p>Signature: _____</p>
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About Flow Research

Flow Research Incorporated, founded in 1998, is the only market research company whose primary mission is researching flowmeter markets. We produce two quarterly Worldflow reports — **Market Barometer** and **Energy Monitor** — and an online **Worldflow Living Database**. **Flash Reports** keep you posted on breaking news in the flowmeter and energy industries.

Our analysis of the world flowmeter market includes more than 5,000 pages of data and a new worldwide survey of flowmeter users. We analyze the market from many different perspectives to provide a more comprehensive view. Studies on the world market for each type of new-technology flowmeter and for each type of traditional technology flowmeter are available. We also have a world study that includes all flow technologies. Our most recently published studies include **The World Market for Pressure Transmitters, 2nd Edition**, **The World Market for Steam Flow Measurement**, and **The World Market for Differential Pressure (DP) Flowmeters and Primary Elements**.

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A STEADY STREAM OF DATA IS COMING YOUR WAY

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Change

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