

The World Market for Magnetic Flowmeters, 4th Edition

Overview



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www.flowmags.com



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The World Market for Magnetic Flowmeters, 4th Edition

Flow Research has completed a new market study on the worldwide magnetic flowmeter market. The name of the study is *The World Market for Magnetic Flowmeters, 4th Edition*. The study has determined the size of the worldwide market, and the market shares of all major suppliers. Market forecasts are included through 2013.

This study has accomplished several important objectives:

- To provide the 2008 market size in US dollars and unit volume for magnetic flowmeters worldwide
- To provide 2008 market shares of the leading suppliers of magnetic flowmeters worldwide
- To provide a forecast of the growth market for magnetic flowmeters in dollars and unit volumes through 2013
- To provide segmented data both on a worldwide basis and for each of seven global regions
- To provide a product analysis for all of the primary suppliers selling into the magnetic flowmeter market
- To identify the industries and applications where magnetic flowmeters are used, and to identify market growth sectors
- To provide market and product strategies for suppliers of magnetic flowmeters worldwide
- To provide company profiles of the significant suppliers of magnetic flowmeters worldwide



Photo of magnetic flowmeters from the Flow Research archive

Rationale for Study

Flow Research published the 3rd edition of our worldwide magnetic flowmeter study in September 2005. We have been following the magnetic flowmeter market regularly since then, providing quarterly updates in our **Market Barometer** (www.worldflow.com). We have also conducted user interviews that show that interest in magnetic flowmeters remains at a very high level. We believe that this is an optimal time to accurately quantify the size and growth of this flowmeter technology, and to provide a comprehensive view of its expanding market.

Background of Study

Magnetic flowmeters are among the most widely used types of flowmeters for measuring the flow of water and other liquids. They have been around for more than fifty years. The Tobinmeter Company first introduced magnetic flowmeters for commercial use in Holland in 1952. Foxboro introduced them to the United States in 1954. Since that time, more than 35 suppliers worldwide now offer magnetic flowmeters for sale.

Magnetic flowmeters generate more revenues worldwide than any other type of flowmeter, with the exception of DP flowmeters and primary elements. The story is different in terms of units, however. More positive displacement, turbine, DP, and variable area flowmeters are sold annually than are magnetic flowmeters. The higher average selling price of magnetic flowmeters enables them to generate more revenues annually than any of these other types of meters.

Magnetic flowmeters are most widely used in the water & wastewater and chemical industries. Over 40 percent of the revenues generated by magnetic flowmeters are sold into these industries. These meters are also widely used in the food & beverage and pharmaceutical industries, which often require flowmeters to conform to sanitary requirements. Flowmeter suppliers meet these requirements in part by placing hygienic liners inside the meters to make them suitable for use in sanitary applications.

Key Issues Addressed

This study addresses the key issues in the magnetic flowmeters market, including:

- The growth outlook for magnetic flowmeters worldwide and by region
- The demand for 2-wire, 4-wire, and wireless/battery meters
- The displacement of AC magnetic meters with DC types
- The competitive price pressure on magnetic flowmeters
- The need for insertion magnetic flowmeters
- The line sizes where magnetic flowmeters are most frequently used
- The types of liners used in magnetic flowmeters and their proportions of the market
- The adoption rates of communication protocols in smart magnetic flowmeters
- Features that end-users are looking for in magnetic flowmeters

Operating Principle

Magnetic flowmeters use Faraday's Law of Electromagnetic Induction. According to this principle, when a conductive medium passes through a magnetic field, a voltage is generated. This voltage is directly proportional to the velocity of the conductive medium, the density of the magnetic field, and the length of the conductor. In Faraday's Law, these three values are multiplied together, along with a constant, to yield the magnitude of the voltage.

Magnetic flowmeters use wire coils mounted within or outside of the meter body. A current is then applied to these coils, generating a magnetic field. As the conductive liquid passes through the body of the meter, a voltage is generated and detected by electrodes, which are mounted on either side of the meter body. The flowmeter uses this value to compute the flowrate.

Magnetic flowmeters are used to measure the flow of conductive liquids and slurries, including paper pulp slurries and black liquor. Their main limitation is that they cannot measure hydrocarbons (which are nonconductive), and hence are not widely used in the oil & gas and refining industries. Magmeters, as they are often called, are highly accurate and do not create pressure drop. Their initial purchase cost is in the medium range, and comparable to the cost of vortex flowmeters. Magnetic flowmeters typically cost more than positive displacement and turbine flowmeters, but they cost significantly less than Coriolis and ultrasonic flowmeters.

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
- Having the best information helps you make the best decisions

Study Segments

This study's segmentation is the result of our own experience in previous research, combined with input from multiple companies who suggested important new categories. We are grateful for the cooperation of all the firms who assisted in the final design of the study questionnaire. Flow Research believes that this cooperative approach to research ultimately yields the best data. (See the description of the *Founding Sponsor Program* enclosed in this overview)

Below is a review of this study's most important data segments.

Geographic Segmentation

For the first time, we are including China and Latin America as separate regions.

- North America
- Europe, including Central Europe and Former Soviet Union (FSU)
- Middle East/Africa
- Japan
- China
- Rest of Asia
- Latin America



Mounting Type

While there are many large magnetic flowmeters, insertion is always an option, especially for the largest sizes:

- Wafer
- Flanged
- Insertion

Measurement Variable Type

- Single Variable
- Multivariable

Study Segments *(continued)*

Power Type

Battery-operated and wireless options are becoming more important in this market

- 2-Wire
- 4-wire
- Wireless/Battery



Configuration

- Remote
- Integral (Compact)

Accuracy

- < 0.5% (higher accuracies such as 0.25% or 0.15%)
- = 0.5%
- > 0.5% (lower accuracies such as 1.0% or 1.25%)

Coil Power Type

AC is still an option in a market that has largely moved to DC

- AC
- Standard DC
- High Strength DC
- Dual Frequency DC



Liner Material

- | | |
|---|-----------------|
| • PFA (perfluoroalkoxy) | • Polypropylene |
| • PTFE (polytetrafluoroethylene) | • Polyurethane |
| • EPDM (ethylene propylene diene monomer) | • Hard Rubber |
| • ETFE (ethylene tetrafluoroethylene) | • Soft Rubber |
| • Ceramic | • Other |

Line Sizes

In this edition we are giving a more detailed breakout by line size

- | | |
|---------------------|--------------------|
| • ½ inch or less | • >20 to 24 inches |
| • >½ inch to 1 inch | • >24 to 30 inches |
| • >1 to 2 inches | • >30 to 36 inches |
| • >2 to 4 inches | • >36 to 48 inches |
| • >4 to 8 inches | • >48 to 78 inches |
| • >8 to 12 inches | • >78 inches |
| • >12 to 20 inches | |



Dr. Yoder walking inside an 86 inch magnetic flowmeter

Study Segments *(continued)*

Average Selling Prices

Average selling prices are provided on both a geographic and mounting type basis.

- Worldwide average selling prices
- Regional average selling prices (for all seven regions in the study)
- Average selling prices by mounting type:
 - Wafer
 - Flanged
 - Insertion

Water and Wastewater Applications

The water and wastewater industry is quantified by water and wastewater applications.

- Worldwide water applications
- Regional water applications
- Worldwide wastewater applications
- Regional wastewater applications



Sanitary/Hygienic Models

- Offered
- Not offered

Magnetic Flowmeters by Type

- Conventional
- Smart

Communication Protocols in Smart Flowmeters

- | | |
|------------------------|-------------|
| • HART | • Modbus |
| • Foundation Fieldbus™ | • DeviceNet |
| • Profibus DP | • Serial |
| • Profibus PA | • Other |

Industries

- Oil & Gas
(Production, Transportation, Distribution)
- Refining
- Chemical
- Food & Beverage
- Pharmaceutical
- Pulp & Paper
- Metals & Mining
- Electric Power
- Water & Wastewater
- District Energy
- Other



Study Segments *(continued)*

Applications

- Water Flow
- Water-based Chemicals
- Slurries
- Sanitary/Hygienic
- Process Control
- Custody Transfer
- Filling Machines
- Other

Magnetic Flowmeter Sales by Distribution Channel

- Direct Sales
- Independent Representatives
- Distributors
- E-Business

Magnetic Flowmeter Sales by Customer Type

- End-Users
- Systems Integrators
- OEMs
- Engineering and Consulting Firms



Market Shares of Major Suppliers

This study provides company market share data in multiple categories. Included in these categories are the company market share segmentations listed below:

- Market Shares Worldwide and by Region
- Market Shares by Mounting Type:
 - Wafer / Flanged / Insertion
- Market Shares by Power Type:
 - 2-wire / 4-wire / Wireless/Battery
- Market Shares by Product Type:
 - Smart / Conventional
- Market Shares by Coil Power Type:
 - AC / DC

Strategies for Success

- Discussion of market forces at work
- Strategic action perspectives
- Real world success stories



Company Profiles

We provide complete company profiles on 49 magnetic flowmeter suppliers. The following is a partial list of the companies that are included:

- ABB
- Arkon Flow Systems
- ASA Spa
- Automation Progetti
- Badger Meter Inc.
- BAMO Mesures SAS
- Bürkert GmbH & Co
- Emerson Rosemount
- Endress+Hauser
- Euromag International
- Georg Fischer Signet
- Invensys Group
- GEA Diessel
- Gruppo Isoil S.p.a.
- Heinrichs Messtechnik
- KROHNE
- McCrometer
- OVAL Corporation
- Shanghai Yinuo Instr. Co
- Sibnefteavtomatika
- Siemens AG
- Sparling Instruments
- Tecfluid S.A.
- Toshiba Corp.
- Yamatake Corp.
- Yokogawa Electric Co.
- *and more*

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 an analyst in process control and instrumentation. Since 1990, he has written more than 100 market research studies, most of them regarding flow and instrumentation. A selection of recent and scheduled Flow Research studies includes:

- I. The World Market for Coriolis Flowmeters, 3rd Edition (*September 2008*)
- II. The World Market for Magnetic Flowmeters, 4th Edition (*May 2009*)
- III. The World Market for Ultrasonic Flowmeters, 3rd Edition (*January 2008*)
- IV. The World Market for Vortex Flowmeters, 4th Edition (*August 2009*)
- V. The World Market for Differential Pressure (DP) Flowmeters and Primary Elements (*Jan 2007*)
- VI. Worldwide Survey of Flowmeter Users, 2nd Edition (*January 2006*)
- VII. The World Market for Positive Displacement Flowmeters (*2002*)
- VIII. The World Market for Turbine Flowmeters (*2002*)
- IX. The World Market for Pressure Transmitters, 2nd Edition (*October 2007*)
- X. The World Market for Flowmeters, 2nd Edition (*April 2008*)
- XI. The World Market for Gas Flow Measurement (*September 2004*)
- XII. The World Market for Steam Flow Measurement (*March 2008*)
- XIII. The World Market for Mass Flow Controllers (*July 2008*)
- XIV. The World Market for Thermal Flowmeters (*July 2009*)
- XV. Liquid Flow Measurement in the Water & Wastewater Industry (*October 2009*)
- XVI. The World Market for Liquid Analytical Instruments (*December 2009*)

Dr. Yoder has also written more than 90 articles on flow and instrumentation for trade journals. Links to many of these can be found at www.flowresearch.com/articles.htm.

Norman Weeks, Senior 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, has completed several studies, and regularly contributes articles and editorial assistance to our *Market Barometer* and *Energy Monitor* publications.

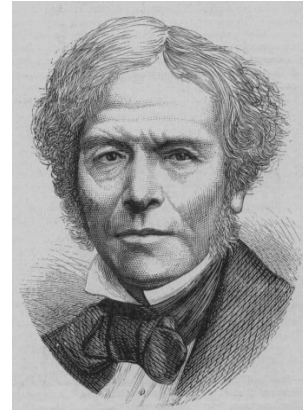
Belinda Burum, Vice President and Editor, has worked in high tech for 16 years as a technical writer and marketing communications manager. She joined the company in 2002, and has since worked on many projects. In addition to her work on market studies, Belinda also serves as an associate editor of *Market Barometer* and *Energy Monitor*.

Besides writing and publishing studies of this type, Flow Research conducts user surveys that include detailed analyses of customer perceptions. In addition, Flow Research provides quarterly updates on the flow and energy industries in the *Market Barometer* and *Energy Monitor* publications. The *Energy Monitor* analyzes the current state of the oil & gas, refining, power, and renewables industries, and the implications for instrumentation suppliers. 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.



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Michael Faraday, 1791-1867

The Flow Research *Founding Sponsor Program*

Flow Research instituted the Founding Sponsor Program to produce studies that most closely match our clients' needs. 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 purchase of the study upon its completion.

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 do our best to accommodate the specific needs of each of our clients.

During the research phase of a study, Flow Research issues interim reports to program sponsors that provide updates on the progress of the research. These reports are sent to the Founding Sponsors, who are then invited to provide any additional input or comments to 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 usual retail 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 completed study.

For additional details, or to learn how the Founding Sponsor Program might benefit you, please contact Norm Weeks at [1] 781-245-3200, or at norm@flowresearch.com.

We look forward to working with you!

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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

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