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The World Market for Pressure Transmitters, 4th Edition

Overview



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The World Market for Pressure Transmitters, 4th Edition

Flow Research has completed a new study on the worldwide pressure transmitter market. In this study, we determined the size of the pressure transmitter market in 2013. The market is forecast through 2018.

The study is called **The World Market for Pressure Transmitters, 4th Edition**.

The 3rd Edition of this study, published in August 2011, observed that pressure transmitter revenues had grown substantially during the previous five years. Further, it was noted that the total size of the worldwide pressure transmitter market was a little less than half the size of the worldwide flowmeter market in terms of revenues.



But annual sales do not tell the whole story of the pressure transmitter market. We believe the size of the installed base is a major reason why the pressure transmitter market is strong and will continue to hold its own within the instrumentation world.

Reasons for Growth

Several factors account for the growth in the transmitter market.

First, the pressure transmitter market has grown due to growth in the number of capital projects in Asian and other countries, and especially due to growth in China and the Mideast.

Second, there has been a tremendous increase in the amount of activity in oil & gas exploration and production in the past several years, due to increases in the price of oil and natural gas.

Finally, suppliers have made significant technological improvements to their pressure transmitters, resulting in more stable and accurate products, and this has given customers a reason to buy into this market, or to upgrade their existing products.

Rationale for Study

Flow Research published the 3rd edition of our worldwide pressure transmitter study in 2011. With significant growth in the oil and gas and other energy markets, we believed that it was an optimal time to see what happened to the pressure transmitter market in 2010 after the downturn that many companies experienced in 2009.

Considering the size and growth in this market, we decided that it was time for a fresh look at the pressure transmitter market. This study accomplished the following goals:

- Determine worldwide and regional market shares for pressure transmitters in 2013
- Forecast market growth for all types of pressure transmitters through 2018
- Identify industries and applications where pressure transmitters are used, focusing especially upon high growth areas
- Provide average selling prices for all types of pressure transmitters worldwide and by region
- Analyze products for the main companies selling into the pressure transmitter market
- Offer strategies to manufacturers for selling into the pressure transmitter market
- Profile main pressure transmitter suppliers
- Identify the factors causing the market to grow

A History of Pressure Measurement

The history of pressure measurement goes back to the 17th century, when both Evangelista Torricelli and Blaise Pascal experimented with early versions of the barometer. For many years, pressure was measured with a manometer, a U-shaped tube partially filled with mercury, oil, or some other liquid. When gas pressure is introduced into one end of the tube, the liquid is displaced. The amount of displacement is proportional to the amount of gas pressure.

These early methods of pressure measurement have been replaced in today's environment with pressure transducers and transmitters.

One advantage of today's electronic pressure transmitters is that they can signal when actions need to be taken, depending on the pressure reading of a gas, liquid, or steam. Electronic signals from a pressure transmitter allow it to be integrated into a control system, unlike earlier mechanical methods, including pressure gages, that were manually read.

Background

In conducting this study, we contacted all known manufacturers of pressure transmitters worldwide to assemble a picture of the total pressure transmitter market. We asked suppliers to provide detailed information about geographic segmentation, industries sold into, types of pressure transmitters sold, and many other product segments. As a result, the study identifies where growth is occurring in the market, as well as the underlying factors driving that growth.

Pressure transmitters are typically made up of a pressure sensor, an amplifier or conditioning element, and an output signal. The output signal is used to transmit the pressure reading to a flow computer, controller, or distributed control system (DCS).

While pressure transmitters are used to measure pressure, they also have an important relation to three other widely measured variables: flow, level, and temperature. Differential pressure (DP) transmitters can measure both flow and level, and some pressure transmitters have temperature

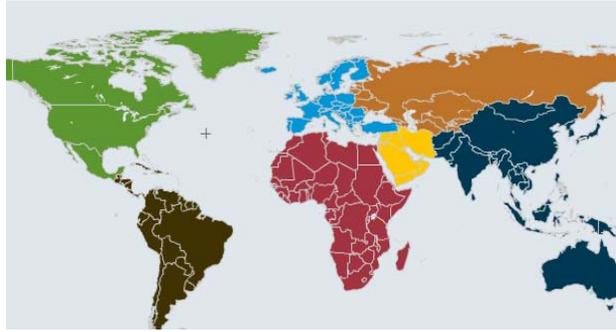
sensors on board to measure temperature. In some cases, this temperature measurement is used along with a pressure and volumetric flow measurement to compute mass flow.

This study does not include pressure transducers, which are generally lower in cost and smaller than pressure transmitters, and are typically not used in the process industries.

Segmentation

Geographic Segmentation

- North America (U.S. and Canada)
- Western Europe
- Eastern Europe (including Central Europe and FSU)
- Mideast and Africa
- Japan
- China
- India
- Rest of Asia/Pacific
- Latin America (Mexico, Central and South America)



Pressure Transmitters by Type

Pressure transmitters are divided by the following four types and further subdivided according to whether they are used to measure flow or level:

- Multivariable (MV) pressure transmitters that measure two or more process variables – usually pressure and temperature – in a single device.
- Differential pressure (DP) transmitters that measure the difference in pressure upstream and downstream of a constriction in a pipe called a primary element.
- Gage pressure transmitters that measure an amount of pressure that includes atmospheric pressure.
- Absolute pressure transmitters that measure an amount of pressure that does not include atmospheric pressure.

DP and Multivariable Pressure Transmitters by Fluid Type

Pressure transmitters are segmented by fluid type:

- Hydrocarbon Liquids
- Non-hydrocarbon Liquids
- Steam (all types)
- Gas (all types)

Pressure Transmitter Types by Function

Pressure transmitter types are a valuable measurement device in a wide variety of applications. This study determines the use of all types of pressure transmitters in the following three categories:

- Flow
- Level
- Process Pressure



Pressure Transmitters by Mounting Accessories

Pressure transmitters are distinguished by whether they are shipped with any of the following mounting accessories, or with none:

- Remote Seals
- Manifolds only
- Primary Element Assemblies
- None

Pressure Transmitters by Smart vs. Conventional

Pressure transmitters are also segmented as follows:

- Smart
- Conventional (includes “low cost” transmitters)

Pressure Transmitters by Communication Protocol

Smart pressure transmitters are segmented by the following protocols:

- Analog only
- Foundation Fieldbus[®]
- Proprietary Digital
- *Wireless*HART[®]
- HART[®]
- Profibus
- Ethernet
- Other

Pressure Transmitters by Sensing Technology

Pressure transmitters are segmented in this study by the following sensing technologies:

- Capacitive
- Piezoelectric
- Piezoresistive
- Strain Gage
- Other

Pressure Transmitters by Wiring and Power Type

- Wireless
- Battery-powered
- 2-Wire
- 4-Wire

Pressure Transmitters by Industry

We include the following industries in this study:

- Oil & Gas (production, transportation, and distribution)
- Refining/Petrochemical
- Chemical
- Food & Beverage
- Pharmaceutical
- Pulp & Paper
- Metals & Mining
- Power
- Water & Wastewater
- HVAC / Industrial Utilities
- Other

Key pressure transmitter market issues addressed in this study

- Factors causing the market to grow
- Growth in the use of multivariable transmitters
- Impact of new-technology flowmeters on DP transmitter sales
- Impact of higher-accuracy pressure transmitters on user practices and purchases
- Role of installed base in maintaining pressure transmitter growth
- Trend toward pressure transmitters with increased diagnostic capabilities
- Acceptance rate of communication protocols such as Foundation Fieldbus in the market
- Extent to which primary element sales are driving sales of DP transmitters
- Trend towards integrating primary elements with DP transmitters into a single flowmeter
- New product and technology developments
- Growth strategies for pressure transmitter suppliers
- Importance of gage & absolute pressure transmitters in relation to plant safety and efficiency

Differential Pressure Transmitters by Measurement Type

- *Mass Flow* measurement
- *Volumetric Flow* measurement

Pressure Transmitters by Sales Channels

The pressure transmitter market is segmented according to the following sales channels:

- Direct sales
- Independent representatives
- Distributors
- E-Business

Pressure Transmitters by Customer Type

The pressure transmitter market is segmented according to the following customer types:

- End-users
- OEMs
- Systems Integrators
- Engineers/Consultants

Market Shares of Leading Pressure Transmitter Manufacturers

- Worldwide
- By Region

Strategies for Success

- Discussion of market forces at work
- Strategic action perspectives and forming alliances to enhance product offerings

Company Profiles of Major Manufacturers Worldwide (Partial List):

- | | | |
|------------------------|-------------------------|---------------------|
| • ABB | • Emerson Process Mgmt. | • Honeywell |
| • Anderson Instruments | • Endress+Hauser | • Siemens |
| • Azbil (Yamatake) | • Foxboro (Schneider) | • SMAR Equipamentos |
| • Cameron | • Fuji Electric | • Yokogawa |

Research Team Background

Dr. Jesse Yoder is President of Flow Research Inc., a company he founded in 1998. Dr. Yoder has 28 years of experience as a writer and an analyst in process control and instrumentation. Since 1990, he has written more than 180 market research studies, most of them about flow and instrumentation. Dr. Yoder has also written more than 240 articles on flow and instrumentation for trade journals. Links to many of these can be found at www.flowarticles.com.

Norm Weeks, Senior Market Analyst, joined Flow Research in November 2004 after a 24-year stint with Verizon. He is now a fulltime market analyst for Flow Research, and regularly contributes to our *Market Barometer* and *Energy Monitor* publications.

Christina Glaser, a Research Analyst, is a seasoned software programmer, systems architect, and developer with significant website experience. In addition to her technical talent, she brings significant customer savvy, with clients that have ranged from Staples to Microsoft.

Nicole Riordan, Director of Marketing, joined Flow Research in 2009. She provides valuable assistance with many functions in the office, and heads our marketing and direct outreach efforts.

Leslie Buchanan, Research Associate, joined Flow Research in March 2010. She assists with research and writing for Flow Research studies and publications, develops and implements standards for publication formats, and manages the contacts database.

Vicki Tuck, Administrative Assistant, joined Flow Research in June, 2012. She has experience in both the fast-paced law firms of Boston, and in various nonprofit organizations. In addition to administrative support, she also collects news for Flow Research publications.

Flow Research also specializes in user surveys that include a detailed analysis of customer perceptions. And, Dr. Yoder is available for group presentations and consultations.

Flow Research studies contribute to an ongoing view of the flowmeter market

Listed below is a summary of recent and upcoming Flow Research studies in the area of process control instrumentation. These studies are further described at www.flowstudies.com.

Vol I	The World Market for Coriolis Flowmeters, 4 th Edition	www.flowcoriolis.com
Vol II	The World Market for Magnetic Flowmeters, 5 th Edition	www.flowmags.com
Vol III	The World Market for Ultrasonic Flowmeters, 4 th Edition	www.flowultrasonic.com
Vol IV	The World Market for Vortex Flowmeters, 5 th Edition	www.flowvortex.com
Vol V	The World Market for DP Flowmeters and Primary Elements	www.flowelement.com
Vol V-A	The World Market for DP Flow Transmitters	www.flowDP.com
Vol VI	Worldwide Survey of Flowmeter Users, 2 nd Edition	www.flowresearch.com
Vol VII	The World Market for PD Flowmeters, 2 nd Edition	www.flowPD.com
Vol VIII	The World Market for Turbine Flowmeters, 2 nd Edition	www.flowturbine.com
Vol IX	The World Market for Pressure Transmitters, 4 th Edition	www.pressureresearch.com
Vol X	The World Market for Flowmeters, 5 th Edition	www.flowvolumex.com
Vol X	Module A: Strategies, Industries, and Applications	www.flowvolumex.com
Vol XI	The World Market for Natural Gas and Gas Flow Measurement, 2 nd Edition (six volumes)	www.gasflows.com
Vol XII	The World Market for Steam Flow Measurement	www.steamflows.com
Vol XIII	The World Market Mass for Flow Controllers, 2 nd Edition	www.flowmfc.com
Vol XIV	The World Market for Thermal Flowmeters	www.flowthermal.com
Vol XV	The World Market for Liquid Analytical Instruments	www.flowanalytical.com
Vol XVI	The World Market for Oil and Oil Flow Measurement (six volumes)	www.oilflows.com

In addition, Flow Research provides quarterly updates on the flow and energy industries in the *Market Barometer* and *Energy Monitor*. *Market Barometer* provides current information on process control instrumentation and the companies within the industry. *Energy Monitor* analyzes the current state of the oil & gas, refining, power, and renewable industries, and the implications for instrumentation suppliers. Both reports are part of the Worldflow Monitoring Service. More details are available at www.worldflow.com.



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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 regular price 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 +1 781 245-3200, or norm@flowresearch.com.

Pressure Transmitter Articles

Since 2007, Flow Research has published the following pressure-related articles in the indicated industry journals listed below. You can find these and more articles at www.pressureresearch.com

- [Pressure Transmitter Perspectives: Technology Trends, Application Scenarios, & Market Insights - Flow Control](#), August 2014
- [Differential Pressure Flowmeters: Legacy Technology adds Features to Meet Application Needs - Flow Control](#), December 2013
- [Part II: Trend Watch. A Look at Recent Developments in Traditional Technology Flowmeters - Flow Control](#), June 2013
- [Part I: Flow Trend Watch. A Look at Recent Developments in New-Technology Flowmeters - Flow Control](#), May 2013
- [Energy Applications Drive Flowmeter Technology Improvement - Flow Control](#), December 2012
- [Custody Transfer of Oil & Gas - Flow Measurement Accuracy with Money on the Line - Flow Control](#), October 2012
- [Differential-Pressure Flowmeters - An Old Standard Remains Strong - Flow Control](#), December 2012
- [DP: Seizing Opportunity from a Rise in Oil & Gas Exploration - Flow Control](#), December 2011
- [The Exclusive Large Line Size Meter Club - Processing](#), November 2011
- [Part II: Pros and Cons of Gas Flowmeters - Flow Control](#), September 2011
- [Turbine Flowmeters: A Strong Position in Gas Flow Applications - Flow Control](#), December 2010
- [Differential-Pressure Flowmeters: A Traditional Technology Incorporates Advanced Features - Flow Control](#), December 2010
- [Flow Update: Something to be Said for Tradition - FlowControlNetwork.com](#), November 2010
- [Flowmeter Battle Royale - The Competition in an Expanding Custody Transfer Market - Processing](#), July 2010
- [Energy Demand Propels Custody Transfer Flow Measurement - Pipeline & Gas Journal](#), July 2010
- [Accuracy Matters - The Where and Why of Flowmeter Calibration - FlowControlNetwork.com](#), July 2010
- [Measuring Gas Flows - Flowmeter Suppliers Jockey for Position in Critical Applications - Flow Control](#), June 2010
- [Turbine Flowmeters -An Industry Standard Faces New Competition - Flow Control](#) - December 2009
- [Not so Elementary - New Primary Elements Expand the Reach of DP Flow Measurement - Flow Control](#), September 2009
- [The Heavyweights of Flow Measurement - Coriolis, Magnetic, and Ultrasonic Flowmeters Square Off for Flow Measurement Supremacy - Processing](#), July 2009
- [Measuring the World's Water Supply - Flowmeters for Water & Wastewater Applications - Flow Control](#), February 2009
- [Pioneers of Flow Measurement - Founding the Technologies of Today - Flow Control](#), January 2009
- [Differential Pressure Flowmeters: Elemental Improvements - Flow Control](#), December 2008
- [Market Outlook for Flowmeters by Technology - Flow Control](#), December 2008
- [Measuring a 1% Gain in a \\$4.5 Billion Market - Flow Control](#), June 2008

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Why Flow Research?

- We specialize in flowmeter and pressure 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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