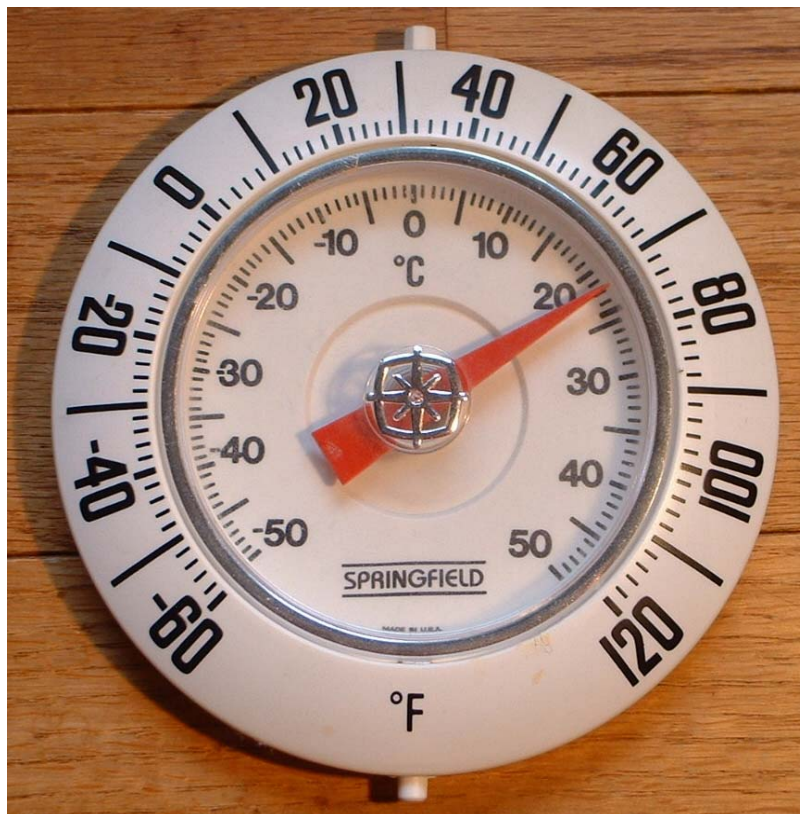




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# The Market for Temperature Sensors in the Americas, 3<sup>rd</sup> Edition

## Overview



**Publication Date:  
Q1 2017**

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In response to popular demand, Flow Research is updating our market research study on temperature sensors in the Americas. This study was previously published in 2000 and 2006.

The new study, *The Market for Temperature Sensors in the Americas, 3<sup>rd</sup> Edition* will be based on 2015 data, with forecasts to 2020. As in the previous editions, this study will cover markets in the U.S., Canada, and Latin America regions.

The study will identify the following elements:

- Market size for all types of temperature sensors in 2015 by region
- Market shares for all types of temperature sensors in 2015
- Market growth and forecasts for all types of temperature sensors through 2020
- Industries where temperature sensors are used, and areas of new market growth
- Growth factors and purchasing trends in the market
- Product analyses for the main companies selling into the temperature sensors market
- Strategies for manufacturers selling into the temperature sensors market
- Company profiles of the main suppliers of temperature sensors

## Rationale for Studies

The temperature sensors market is diverse, with many suppliers and with a number of different technologies. In the last study, we found a shift from thermocouples to Resistance Temperature Detectors (RTDs), and a shift within RTDs from wirewound to thin-film. At the same time, thermistors are still widely used in the food, pharmaceutical, and HVAC industries. Other members of the temperature sensors market include infrared and fiber optic.

During the last few years supplier consolidation has continued, and temperature sensor technology has evolved. Flow Research proposes to take a new look at the temperature sensor market. We propose to determine market size by type of temperature sensor, determine market shares, and identify growth trends. With the background of the earlier studies available as baselines, we expect to be able to accurately describe how the market has changed over the past ten years.

Data will be based on 2015 revenues and units for temperature sensors, with forecast data through 2020.

*The Market for Temperature Sensors in the Americas, 3<sup>rd</sup> Edition* will be published in Q1 2017.

## Segmentation for Temperature Sensors in the Americas

### Geographic Segmentation

*The Market for Temperature Sensors in the Americas, 3rd Edition* will include temperature sensors sold into the following geographic regions from the Americas, Europe, Asia, and all other regions:

- United States
- Canada
- Latin America (Mexico, Central & South America)

### Average Selling Price of Temperature Sensors by Region

This study determines the average selling price of temperature sensors by region and by technology in the following areas:

- United States
- Canada
- Latin America (Mexico, Central & South America)

### Temperature Sensors by Technology Type

This study focuses on the following types of temperature sensors and probes:

- Thermocouples
- RTDs
- Thermistors (including PTC and NTC)
- Infrared Thermometers/Thermocouples
- Fiber Optic temperature sensors (contact & non-contact)
- Thermowells (sensor accessory)

This study does not include integrated circuit (IC) sensors.

### Market Size and Forecast

The study will determine the total market size for all of the technologies included in the study broken down by:

- Technology (in US Dollars and number of units)
- Geographic Region (in US Dollars and number of units)

The study will also calculate the **market forecast** and compound annual growth rate (CAGR) from 2015 to 2020 by:

- Total for all technologies included in study (in US Dollars and number of units)
- By geographic region (in US Dollars and number of units)
- By each technology included in the study – (in US Dollars and number of units)

**Market size and forecasts by technology** include the following breakouts:

- Thermocouple probes and assemblies by the following types:
  - Type J
  - Type K
  - Type T
  - Type E
  - Noble Metal (platinum-based: Types R, S, and B)
  - Exotics (tungsten-based: Types G, C, and D)
  - Others
  
- RTD Probes or assemblies (not elements only):
  - Wirewound
  - Thin Film
  
- Infrared Thermometers:
  - Portable (handheld)
  - Fixed
  
- Thermocouple Output Signals:
  - Voltage
  - Process (4-20 mA, 0-10 V)
  - Serial (RS232, RS485)
  - Ethernet
  - USB
  - Wireless
  
- Infrared Thermometer Output Signals:
  - Voltage
  - Process (4-20 mA, 0-10 V)
  - Serial (RS232, RS485)
  - Ethernet
  - USB
  - Wireless



### **Market Shares by Supplier**

This study determines the market shares for the top temperature suppliers in the following ways:

- Total (in US dollars)
- Geographic region (in US dollars)
- Market shares by sensor type (in US dollars)

## Temperature Sensors by Industry

Industries included in this study are:

- Oil and/or Gas Production, Transportation, Distribution
- Refining
- Chemical
- Pharmaceutical
- Food & Beverage
- Pulp & Paper
- Metals & Mining
- Power
- Water & Wastewater
- Automotive
- Aerospace
- Plastics/Rubber
- HVAC/R (Heating Ventilating, Air Conditioning and Refrigeration)
- Textiles
- Electronics/Semiconductor
- Medical
- Other

## Temperature Sensor Sales

This study will look at temperature sensor sales **by distribution channel** in US dollars for 2015 and projected to 2020:

- Direct
- Independent representatives
- Distributors
- E-Business

This study will also look at temperature sensor sales **by customer type**:

- End-users
- Original equipment manufacturers (OEMs)
- Systems integrators
- Engineering and consulting firms
- Resellers (including catalog companies)

## Strategies for Success

The study will outline strategies for success for suppliers in the competitive temperature sensor market. These strategies will be based upon the most current research findings.

## Company Profiles

The study will profile the major temperature sensor manufacturers selling into the Americas market and a list of other significant suppliers in the market.

**The following is a partial list of temperature sensor suppliers to be profiled in this study:**

- ABB
- Alloy Engineering Company
- Amphenol Advanced Sensors
- Burns Engineering
- Chromalox
- Cooper-Atkins Corp.
- Emerson Process – Rosemount
- Endress+Hauser
- Fluke Corp. (Iacon, Raytek)
- Honeywell Sensing and Controls
- JMS Southeast, Inc.
- Mac-Weld Machinery
- Minco Products
- Omega Engineering, Inc.
- Pyromation
- SOR Group (Smart Sensors, Inc.)
- Thermo Electric, Inc.
- Thermo-Kinetics Company, Ltd.
- U.S. Sensor Corp.
- Watlow
- Ultra Electronics (Weed Instrument)
- WIKA Instruments
- YSI, Inc. (Xylem Analytics)
- And Others

**Key Issues Addressed in this study**

- Is the move from wirewound to thin-film RTDs continuing?
- Is the broader switch from thermocouples to RTDs continuing, and at what pace?
- How are thermocouples segmented by type?
- To what extent are low cost suppliers from China, India, and other countries penetrating the temperature sensor market in the Americas and influencing prices?
- What consolidation has occurred in the industry? Will it continue?
- What are the significant market trends in the market today?
- What technology changes are occurring among temperature sensor products?
- What features are end-users looking for in temperature sensors?
- Are end-users switching from one type of temperature sensor to another - and why?

***The World Market for Temperature Sensors, 3<sup>rd</sup> Edition***

Flow Research will soon also be conducting a worldwide temperature sensors study. This study will divide the world into five regions:

- North America (United States and Canada)
- Europe (including Eastern Europe and the FSU)
- Mideast/Africa
- Asia
- Latin America (Mexico, Central and South America)

The segmentation for this study will be very similar to the segmentation for the Americas study.

**Please let us know if you would also be interested in a worldwide temperature sensors study. This study will be published in Q1 2017.**



## The Temperature Sensors Research Team

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 regarding flow and instrumentation. Dr. Yoder has also written more than 250 articles on flow and instrumentation for trade journals. Links to many of these can be found at [www.flowarticles.com](http://www.flowarticles.com).

Belinda Burum, Vice President, worked in journalism and advertising before entering high tech 18 years ago as a writer, marketing communications manager, and customer references consultant. She joined Flow Research in 2002, and has worked on many projects, studies and publications.

Norm Weeks, Senior Market Analyst, joined Flow Research in 2004 after a 24-year stint with Verizon. Norm's previous experiences include serving as Director of the Urban Fellows Institute in New York, and being a Customer Services manager at Automatic Data Processing. At Verizon, Norm specialized in creating innovative solutions for national and international enterprises, introducing new products and lifecycle management, and product marketing. At Flow Research his contributions in development, research and writing have been significant to studies, custom projects, White Papers, and Worldflow's *Energy Monitor* and *Market Barometer*.

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, serves as a customer liaison, and manages the contacts database.

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

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 collects news for Flow Research 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.

Rich West, Research Associate, joined Flow Research in 2014 and has had an immediate impact in customer service relations and media administration. He also provides updates and input to manufacturer databases that are maintained for a variety of research purposes.

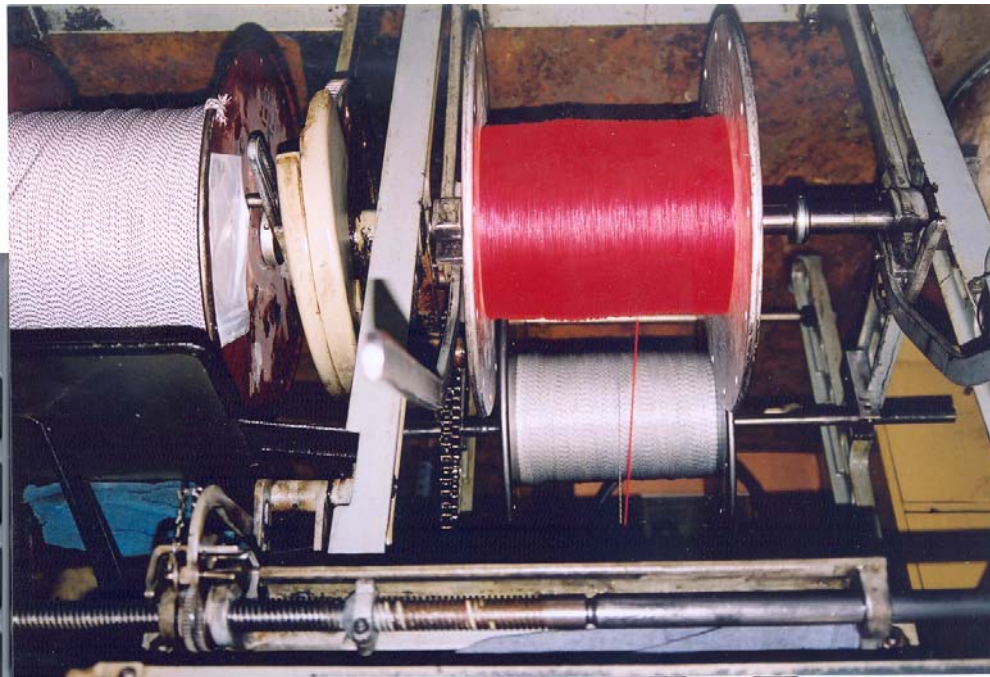
### Recent and currently scheduled Flow Research studies:

The World Market for Coriolis Flowmeters, 5 <sup>th</sup> Edition	<a href="http://www.flowcoriolis.com">www.flowcoriolis.com</a>
The World Market for Magnetic Flowmeters, 6 <sup>th</sup> Edition	<a href="http://www.flowmags.com">www.flowmags.com</a>
The World Market for Ultrasonic Flowmeters, 5 <sup>th</sup> Edition	<a href="http://www.flowultrasonic.com">www.flowultrasonic.com</a>
The World Market for Vortex Flowmeters, 5 <sup>th</sup> Edition	<a href="http://www.flowvortex.com">www.flowvortex.com</a>

The World Market for Ultrasonic Flowmeters, 5 <sup>th</sup> Edition	<a href="http://www.flowultrasonic.com">www.flowultrasonic.com</a>
Volume X: The World Market for Flowmeters, 6 <sup>th</sup> Edition	<a href="http://www.flowvolumex.com">www.flowvolumex.com</a>
The World Market for Pressure Transmitters, 4 <sup>th</sup> Edition	<a href="http://www.pressureresearch.com">www.pressureresearch.com</a>
Worldwide Flow Calibration Facilities and Markets	<a href="http://www.flowcalibration.org">www.flowcalibration.org</a>
The World Market for Natural Gas and Gas Flow Measurement, 3 <sup>rd</sup> Ed.	<a href="http://www.gasflows.com">www.gasflows.com</a>
The World Market for Multiphase Flowmeters	<a href="http://www.flowmultiphase.com">www.flowmultiphase.com</a>
The World Market for Liquefied Natural Gas (LNG)	<a href="http://www.lngflow.com">www.lngflow.com</a>
The World Market for Watercut Meters	<a href="http://www.flowmultiphase.com">www.flowmultiphase.com</a>
The World Market for Level Measurement Devices	<a href="http://www.levelresearch.com">www.levelresearch.com</a>

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).



*Spools of thermocouple wire are readied for manufacturing new products.*





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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 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.

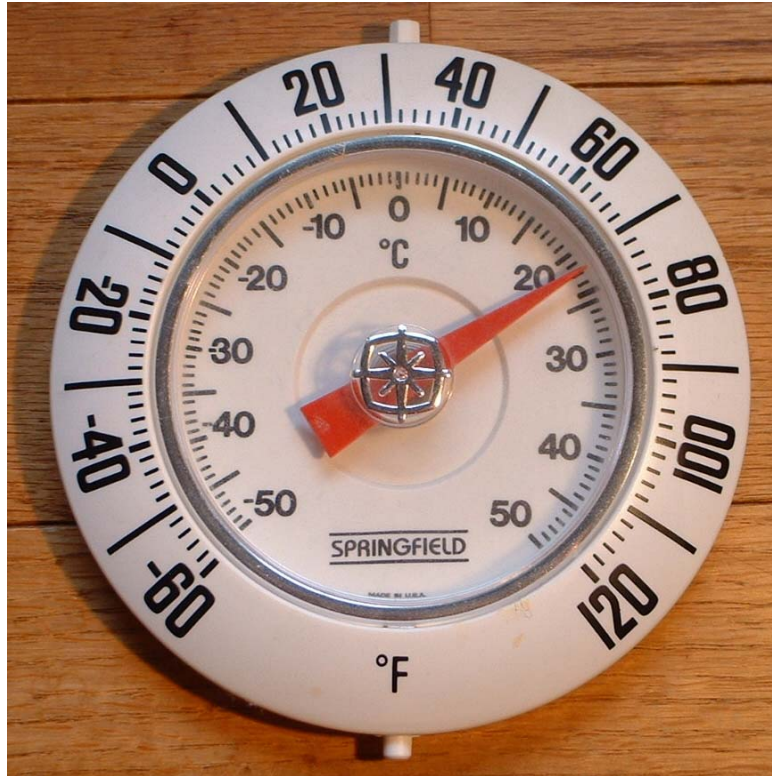
During the research phase of a study, Flow Research will issue regular reports that provide updates on the progress of the research. These reports will be sent to Founding Sponsors, who are then invited to provide any additional input or comments into the study.

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](mailto:norm@flowresearch.com).

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### Why Flow Research?

- We specialize in instrumentation research
- We have researched all types of temperature sensors and transmitters
- 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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