

Measurement Specialties Inc  
Form 10-K  
June 07, 2011

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

FORM 10-K

(MARK ONE)

ANNUAL REPORT PURSUANT TO SECTION 13 or 15 (d) OF THE SECURITIES  
EXCHANGE ACT OF 1934  
FOR THE FISCAL YEAR ENDED MARCH 31, 2011

OR

TRANSITION REPORT PURSUANT TO SECTION 13 or 15 (d) OF THE SECURITIES  
EXCHANGE ACT OF 1934

COMMISSION FILE NUMBER: 1-11906  
MEASUREMENT SPECIALTIES, INC.  
(EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER)

New Jersey  
(STATE OR OTHER JURISDICTION OF  
INCORPORATION OR ORGANIZATION)

22-2378738  
(I.R.S. EMPLOYER  
IDENTIFICATION NO. )

1000 LUCAS WAY, HAMPTON, VA 23666  
(ADDRESS OF PRINCIPAL EXECUTIVE OFFICES)

(757) 766-1500  
(REGISTRANT'S TELEPHONE NUMBER, INCLUDING AREA CODE)

SECURITIES REGISTERED UNDER SECTION 12(b) OF THE ACT:

TITLE OF EACH CLASS:	NAME OF EACH EXCHANGE ON WHICH REGISTERED:
COMMON STOCK, NO PAR VALUE	NASDAQ

SECURITIES REGISTERED UNDER SECTION 12(g) OF THE ACT: NONE

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.  
Yes  No  .

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the  
Act. Yes  No  .

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the  
Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was

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required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No .

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No .

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Securities Exchange Act of 1934. (Check one):

Large accelerated filer  Accelerated filer  Non-accelerated filer  Smaller reporting company   
(Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Securities Exchange Act of 1934). Yes  No .

At September 30, 2010, the last business day of the Registrant's most recently completed second fiscal quarter, the aggregate market value of the voting and non-voting common equity held by non-affiliates of the Registrant was approximately \$141,538,505 (based on the closing price of the registrant's common stock on the NASDAQ Global Market on such date).

At May 31, 2011, the number of shares outstanding of the Registrant's common stock was 15,040,050.

Documents Incorporated by Reference:

The information required to be furnished pursuant to Part III of this Form 10-K is set forth in, and is hereby incorporated by reference herein from, the registrant's definitive proxy statement for the 2011 annual meeting of shareholders (the "2011 Proxy Statement") to be held on or about September 21, 2011 to be filed by the registrant with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the fiscal year ended March 31, 2011. With the exceptions of the sections of the 2011 Proxy Statement specifically incorporated herein by reference, the 2011 Proxy Statement is not deemed to be filed as part of this Form 10-K.

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Measurement Specialties, Inc.  
Form 10-K  
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## Information Relating To Forward-Looking Statements

This report includes forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended. Certain information included or incorporated by reference in this Annual Report, in press releases, written statements or other documents filed with or furnished to the Securities and Exchange Commission (“SEC”), or in our communications and discussions through webcasts, phone calls, conference calls and other presentations and meetings, may be deemed to be “forward-looking statements” within the meaning of the federal securities laws. All statements other than statements of historical fact are statements that could be deemed forward-looking statements, including statements regarding: projections of revenue, margins, expenses, tax provisions (or tax benefits), earnings or losses from operations, cash flows, synergies or other financial items; plans, strategies and objectives of management for future operations, including statements relating to potential acquisitions, executive compensation and purchase commitments; developments, performance or industry or market rankings relating to products or services; future economic conditions or performance; future compliance with debt covenants; the outcome of outstanding claims or legal proceedings; assumptions underlying any of the foregoing; and any other statements that address activities, events or developments that Measurement Specialties, Inc. (“MEAS,” the “Company,” “we,” “us,” “our”) intends, expects, projects, believes or anticipates will or may occur in the future. Forward-looking statements may be characterized by terminology such as “forecast,” “believe,” “anticipate,” “should,” “would,” “intend,” “plan,” “will,” “expects,” “projects,” “positioned,” “strategy,” and similar expressions. These statements are based on assumptions and assessments made by our management in light of their experience and perception of historical trends, current conditions, expected future developments and other factors they believe to be appropriate.

Any such forward-looking statements are not guarantees of future performance and involve a number of risks and uncertainties, many of which are beyond our control. Actual results, developments and business decisions may differ materially from those envisaged by such forward-looking statements. These forward-looking statements speak only as of the date of the report, press release, statement, document, webcast or oral discussion in which they are made. Factors that might cause actual results to differ materially from the expected results described in or underlying our forward-looking statements include:

- Conditions in the general economy, including risks associated with the current financial markets and worldwide economic conditions and demand for products that incorporate our products;
- Competitive factors, such as price pressures and the potential emergence of rival technologies;
- Compliance with export control laws and regulations;
- Fluctuations in foreign currency exchange and interest rates;
- Interruptions in supply chain, distribution systems, suppliers’ operations or the refusal of our suppliers to provide us or our customers with component materials, particularly in light of the current economic conditions, natural or man-made disasters and potential for suppliers to fail;
- Timely development, market acceptance and warranty performance of new products;
- Changes in product mix, costs and yields;
- Uncertainties related to doing business in Europe and China;
- Legislative initiatives, including tax legislation and other changes in the Company’s tax position;

- Legal proceedings;
- Product liability, warranty and recall claims;

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- Compliance with debt covenants, including events beyond our control;
- Conditions in the credit markets, including our ability to raise additional funds;
- Adverse developments in the housing industry and other markets served by us; and
- The risk factors listed from time to time in the reports we file with the SEC, including those described below under “Item 1A. Risk Factors” in this Annual Report on Form 10-K.

This list is not exhaustive. All forward-looking statements attributable to the Company or persons acting on our behalf are qualified in their entirety by the cautionary statements contained in this report in “Item 1A. Risk Factors.” Except as required under federal securities laws and the rules and regulations promulgated by the SEC, we do not intend to update publicly any forward-looking statements after the filing of this Annual Report on Form 10-K, whether as a result of new information, future events, changes in assumptions or otherwise.

## Part I

### Item 1. Business

#### Introduction

Measurement Specialties, Inc. is a global leader in the design, development and manufacture of sensors and sensor-based systems for original equipment manufacturers (“OEM”) and end users, based on a broad portfolio of proprietary technology and typically characterized by the MEAS brand name. We are a global business and we believe we have a high degree of diversity when considering our geographic reach, broad range of products, number of end-use markets and breadth of customer base. The Company is a multi-national corporation with twelve primary manufacturing facilities strategically located in the United States, China, France, Ireland, Germany and Switzerland, enabling the Company to produce and market globally a wide range of sensors that use advanced technologies to measure precise ranges of physical characteristics. These sensors are used for engine and vehicle, medical, general industrial, consumer and home appliance, military/aerospace, water monitoring, and test and measurement applications. The Company’s sensor products include pressure sensors and transducers, linear/rotary position sensors, piezoelectric polymer film sensors, custom microstructures, load cells, accelerometers, optical sensors, humidity, temperature, fluid property sensors and hydrostatic pressure transducers. The Company’s advanced technologies include piezo-resistive silicon sensors, application-specific integrated circuits, micro-electromechanical systems (“MEMS”), piezoelectric polymers, foil strain gauges, force balance systems, fluid capacitive devices, linear and rotational variable differential transformers, electromagnetic displacement sensors, hygroscopic capacitive sensors, ultrasonic sensors, optical sensors, negative thermal coefficient (“NTC”) ceramic sensors, torque sensors, mechanical resonators and submersible hydrostatic level sensors.

Measurement Specialties, Inc. is a New Jersey corporation organized in 1981. As more fully described below under “Changes in our Business,” we discontinued the remainder of our Consumer products business during the fiscal year ended March 31, 2006. Except as otherwise noted, the descriptions of our business and results and operations contained in this report reflect only our continuing operations.

#### Notes:

(1) Our fiscal year begins on April 1 and ends on March 31. All references to fiscal years refer to the fiscal year ending March 31 of the reference year, thus, references in this annual report on Form 10-K to the year 2010 or fiscal 2010 refer to the 12-month period from April 1, 2009 through March 31, 2010 and references to the year 2011 or

fiscal 2011 refer to the 12-month period from April 1, 2010 through March 31, 2011.

(2) All U.S. dollar and other currency amounts in this report are in thousands, except per share amounts.

(3) “As Adjusted” reflects the deconsolidation of Nikkiso-THERM (“N-T”) in accordance with new accounting principles for consolidation.

#### Acquisitions and Divestitures

The Company has consummated fifteen acquisitions since June 2004 with a total purchase price exceeding \$194,000. We believe our acquisitions continue to enhance the Company’s long-term shareholder value by increasing growth in sales and profitability through the addition of new technologies, establishing new lines of business, and/or expanding our geographic footprint. The following acquisitions are included in the consolidated financial statements as of the effective date of acquisition (See Notes 2 and 5 to the Consolidated Financial Statements of the Company included in this Annual Report on Form 10-K):

Acquired Company	Effective Date of Acquisition	Country
Elekon Industries U.S.A., Inc. (“Elekon”)	June 24, 2004	U.S.A.
Entran Devices, Inc. and Entran SA (“Entran”)	July 16, 2004	U.S.A. and France
Encoder Devices, LLC (“Encoder”)	July 16, 2004	U.S.A.
Humirel, SA (“Humirel”)	December 1, 2004	France
MWS Sensorik GmbH (“MWS”)	January 1, 2005	Germany
Polaron Components Ltd (“Polaron”)	February 1, 2005	United Kingdom
HL Planartechnik GmbH (“HLP”)	November 30, 2005	Germany
Assistance Technique Experimentale (“ATEX”)	January 19, 2006	France
YSIS Incorporated (“YSI Temperature”)	April 1, 2006	U.S.A. and Japan
BetaTherm Group Ltd. (“BetaTherm”)	April 1, 2006	Ireland and U.S.A.
Visyx Technologies, Inc. (“Visyx”)	November 20, 2007	U.S.A.
Intersema Microsystems SA (“Intersema”)	December 28, 2007	Switzerland
R.I.T. SARL (“Atexis”)	January 30, 2009	France and China
FGP Instrumentation, and related companies GS Sensors, and ALS (collectively, “FGP”)	January 30, 2009	France
Pressure Systems, Inc. (“PSI”)	September 8, 2010	U.S.A.

The above companies, except for Encoder, Polaron and Visyx, which were asset purchases, became direct or indirect wholly-owned subsidiaries of the Company upon consummation of their respective acquisitions.

On September 8, 2010, the Company completed its first acquisition in 18 months with the purchase of PSI, a sensor company based in Hampton, Virginia. PSI is a global leader in pressure sensing instrumentation for the aerospace industry and for water monitoring within operational and resource management applications. The water monitoring industry is large and a significant growth opportunity for the Company. Additionally, the Company expects to achieve cost synergies with the PSI business combination mainly through the consolidation of operations due to the close proximity of the acquisition to the Company’s existing Hampton facility.

Effective December 1, 2005, we completed the sale of the Consumer segment to Fervent Group Limited (“FGL”), including its Cayman Island subsidiary, ML Cayman. FGL is a company controlled by the owners of River Display Limited (“RDL”), our long time partner and primary supplier of consumer products in Shenzhen, China. The Consumer Products segment designed and manufactured sensor-based consumer products, primarily as an original equipment manufacturer (“OEM”), that were sold to retailers and distributors in the United States and Europe. Consumer products included bathroom and kitchen scales, tire pressure gauges and distance estimators.





## Products, Markets and Applications

The majority of our sensors are components (sensing elements), devices, or transducers that convert fundamental physical measurands such as temperature, pressure, force, position, angle, acceleration, or humidity into electronic signals. These signals are subsequently used in many applications, including information display, processing, interpretation or control. MEAS sensor technologies can be combined to enable the sensing of more complex measurands, such as fluid viscosity and density, or the specific humidity at the air intake of a modern diesel engine.

The rapid proliferation of sensors continues in all markets and regions, driven in part by the increasing functionality and decreasing size and power of modern electronics. The level of “intelligence” continues to increase in products from virtually all end markets, including medical, transportation, energy, industrial, aerospace, and consumer applications. As OEMs strive to make products “smarter”, they have an expanding demand for sensors to connect the physical world to the digital world in order to improve functionality and competitiveness, decrease system costs, improve energy efficiency, enhance safety and security, and to meet more demanding regulatory requirements.

A summary of some of our sensor product offerings as of March 31, 2011, is presented in the following table.

Product Family	Product	Technology	Applications
Pressure	Pressure Components, Sensors, and Transducers	Piezoresistive Micro-Electromechanical Systems (“MEMS”)	Disposable catheter blood pressure, wrist watch altimeter, process instrumentation, fluid level, intravenous drug administration monitoring, engine performance, barometric pressure, HVAC / building automation, wind tunnel testing, water level management and monitoring
		Microfused TM Piezoresistive Silicon Strain Gauge	Automotive electronic stability control systems, paint spraying machines, fertilizer dispensers, hydraulics, refrigeration, automotive transmission
		Bonded Foil Strain Gauge	Instrumentation-grade aerospace and weapon control systems, sub-sea pressure, ship cargo level, steel mills
Force	Load Cells	Microfused Piezoresistive Silicon Strain Gauge	Automotive occupancy weight sensing, bathroom scales, exercise equipment, appliance monitoring, intravenous drug administration monitoring
Position	Linear Variable Differential Transformers	Inductive Electromagnetic	Aerospace, machine control systems, knitting machines, industrial process control, hydraulic actuators, instrumentation
		Inductive Electromagnetic	

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Rotary Position Transducers		Machine control systems, instrumentation
Magneto-Resistive (MR) sensors and Magnetic Encoders	Magneto-Resistive ("AMR")	Automotive systems controls, pump counting and control, school bus stop sign arm position
Tilt/Angle Sensors	Fluid Capacitive or Electrolytic Fluid	Heavy equipment level measurement, auto security systems, tire balancing, instrumentation

Piezo Film	Traffic Sensors	Piezoelectric Polymer	Traffic survey, speed and traffic light enforcement, toll, and truck weigh-in-motion
	Custom Piezoelectric Film Sensors	Piezoelectric Polymer	Medical diagnostics, ultrasonic pen digitizers, musical instrument pickups, electronic stethoscope, security systems, anti-tamper sensors for data protection, electronic water meters
Vibration	Accelerometers	Micro-Electromechanical Systems instrumentation	Crash test sensors, anthropomorphic dummy sensors, road load dynamics, aerospace traffic alert and collision avoidance systems, instrumentation
	Accelerometers	Piezoelectric Polymer	Cardiac activity sensors, audio speaker feedback, appliance load balancing
Humidity	Relative Humidity Sensors	Capacitive Polymer	Auto anti-fogging systems, diesel engine controls, air climate systems, reprography machines, respirators
Fluid Properties	Fluid Monitoring Sensors	Quartz Mechanical Resonator (Tuning Fork)	Heavy truck/off-road engine and transmission fluid monitoring for viscosity, density and dielectric constant
Temperature	Thermistors & RTDs (Resistance Temperature Detector)	Negative Temperature Co-efficient (“NTC”) Thermistors, Infrared (“IR”), Nickel RTD	Patient monitoring and diagnostics, gas chromatography, HVAC & R, and non-contacting thermometers, microwave and convection oven controls, gas detection
Photo Optics	Pulse Oximetry Sensors (SpO2); X-Ray Detection	Photo optic infra-red light absorption	Reusable and disposable patient blood oxygen and pulse sensors, security system and CT scanner sensor arrays
Torque	Static & Dynamic Torque/Force Sensors	Bonded foil and discrete semiconductor gage	High speed dynamic torque sensors with non-contact technology for engine & gearbox testing in aerospace and motor sports, road load sensors for heavy truck and control of moderator rods in nuclear reactors.

## Technology

The Company has a broad portfolio of technologies available to solve client sensing needs, some of which are proprietary to the Company. Our sensor technologies include:

- **Piezoresistive Technology:** This technology is widely used for the measurement of pressure, force, torque, and acceleration, and includes a number of specific material technologies including doped silicon, doped germanium, and thin metal foils. We believe that the use of piezoresistive technologies is expanding significantly, particularly in the form of micro-electromechanical systems (“MEMS”). The resistance of piezoresistive materials changes in applied mechanical variables such as stress, strain, or pressure. Changes in electrical conductivity can be readily detected using high precision, low cost, low noise electronics. Silicon MEMS devices are particularly advantageous in several large volume markets, and by leveraging commercial silicon manufacturing technology, MEMS can enable the cost-effective manufacture of small devices having high reliability and superior performance. Our proprietary Microfused™ technology employs a silicon strain gauge bonded to a stainless steel diaphragm using a high temperature glassing process devoid of organic material. The diaphragm is in contact with the sensed media in a hermetically sealed housing appropriate for harsh environments. MEAS also has extensive experience in the use of highly stable metal foil bonded strain gauge technology, useful in harsh and high temperature environments in aerospace, military, and sub-sea environments.
- **Piezoelectric Technology:** Piezoelectric materials, including polymers such as PVDF ceramic/polycrystalline materials such as PZT, and single crystal materials such as Lithium Niobate, produce an electrical output as a result of mechanical stress or strain, and conversely produce mechanical expansion or contraction when under an applied electrical signals. These materials are also pyroelectric, converting heat into electrical charge. MEAS is the leading global manufacturer of PVDF films which offer unique sensor design and performance opportunities because they are thin, flexible, tough, chemically inert, very sensitive, and relatively inexpensive. MEAS uses piezoelectric ceramic materials extensively in a number of applications including high performance accelerometry, medical ultrasound, and air ultrasound metrology. Single crystal materials are employed in highly specialized applications including the vibrating tuning fork structures used to extract fluid properties such as density and viscosity.
- **Electrolytic Fluid Tilt Technology:** Inclinerometers are made using a small chamber partially filled with an electrolytic liquid. An alternating voltage is passed between two electrodes on the base of the sensor, and when tilted the electric field and associated current through this fluid change, producing a signal that can be precisely correlated to rotation angle. This technology is durable and highly repeatable.
- **Fluid Capacitive Tilt Technology:** Also known as fluid filled, variable capacitance technology, the output from these sensing elements is two variable capacitance signals per rotation axis. Rotation of the sensor about its sensitive axis produces a linear change in capacitance. This change in capacitance is electronically converted into angular data and provided to the user in ratio metric, analog, or digital format.
- **Inductive Coupling Technologies:** This technology is used in the manufacture of several sensor lines, including Linear Variable Differential Transformers (LVDTs). An LVDT is an electromechanical sensor that produces an electrical signal proportional to the displacement of a movable core rod. They are widely used to measure displacement over the range of a few micro inches to several feet, or, for example, to indirectly measure pressure by detecting the movement of a diaphragm. LVDT’s are capable of extremely accurate and repeatable measurements in harsh and severe environments.
- **Magneto-Resistive (MR) Technology:** Magneto-resistive materials exhibit a change in resistivity as a function of an applied magnetic field. MEAS manufactures MR sensors by depositing ultra-thin layers of a material such as permalloy (NiFe alloy) on top of silicon wafers. Subsequent processing creates complex resistive bridge structures

which are very sensitive to small changes in magnetic fields. MR sensors are highly sensitive, stable, repeatable, and relatively low cost. MR sensing technology can be packaged as low field sensors (i.e., electronic compass), angle sensors such as magnetic encoders, position sensors, and current sensors, and is also offered in a fully integrated surface mountable package which contains an embedded micro controller.

- **Thin Film Diaphragm Technology:** MEAS has substantial wafer processing experience and produces specialized structures having a very thin (several micro-meters) suspended diaphragm in the center of a silicon chip. This technology is particularly well suited for thermopile, mass air flow (MAF), and high temperature gas sensing. Thermopiles are made by creating dense serial arrays of thermocouple junctions on wafer mounted diaphragms. These arrays produce an output as a result of the Seebeck effect and are used to determine temperature without contact as a result of the infrared (IR) radiation of the target (Planck's law). MAF sensors are made by locating thin film thermocouple or thermo-resistive temperature elements on both sides of a thin film heater, all mounted in the center of the low thermal mass diaphragm. As a gas flow over the assembly, convected heat raises the temperature of the downstream sensor in a predictable manner, allowing the calculation of mass flow. Thin metal heaters deposited on these diaphragms can reach temperatures of 400°C very quickly with very low input power, and catalytic chemistry on top of the heater can be designed to undergo a change in resistance in response to certain gas species.
- **Variable Capacitive Technology:** Humidity sensors are built using a special polymer having a dielectric constant affected by water vapor. As the humidity in the environment changes, the capacitance of the polymer dielectric changes and an output is measured. This technology is uniquely designed for high volume OEM applications in consumer, automotive, home appliance, and environmental control markets.
- **Photo Optical Technology:** Photo-Optic sensors produce an output which is related to the variation light intensity or spectral content. MEAS uses LED transmitters and photo-diode light sensitive receivers to detect the variations in oxygen saturation, SpO<sub>2</sub>, in the blood, a widely used technique known as pulse oximetry.
- **Temperature Sensor Technology:** MEAS uses a number of technologies to determine temperature, including negative temperature coefficient ("NTC") thermistors, platinum and nickel thin film and wire based thermo-resistive materials, and thermocouples. Temperature sensors are designed for a huge array of applications and cover a temperature measurement range from less than -200°C to over 1,700°C.
- **Application Specific Integrated Circuits ("ASICs"):** Although ASICs are electronic devices, not sensors, expertise in this technology is essential in the design and manufacture of modern sensors. These specialized circuits are tailored to condition raw sensor outputs, to convert these analog signals into digital signals, to apply calculation algorithms to compensate the signals, and to deliver this information to upstream controllers using digital communications protocols. MEAS has developed considerable experience in sensor specific ASICs and they are increasingly employed in our sensor modules to lower cost, increase resolution and accuracy, increase interface flexibility, and decrease power consumption.

## Business Segments

As a result of the sale of our Consumer Products business segment effective December 1, 2005, the Sensor business segment is our sole reportable segment under the guidelines established by the Financial Accounting Standards Board ("FASB") for disclosures about segments of an enterprise. Our recent acquisitions have been sensor based companies, and as such, have not resulted in additional reportable segments.

Geographic information for revenues based on country from which invoiced, and long-lived assets based on country of location, which includes property, plant and equipment, but excludes Corporate-based assets (i.e., investment in unconsolidated subsidiary, intangible assets and goodwill, net of related depreciation and amortization) follows:

	For the years ended March 31,		
		(As Adjusted)	(As Adjusted)
	2011	2010	2009
<b>Net Sales:</b>			
United States	\$ 98,113	\$ 70,300	\$ 89,557
France	45,901	36,179	28,110
Germany	18,061	15,209	15,375
Ireland	31,071	20,815	12,041
Switzerland	15,852	11,196	13,070
China	65,791	51,329	41,700
Total:	\$ 274,789	\$ 205,028	\$ 199,853
<b>Long Lived Assets:</b>			
United States	\$ 9,079	\$ 6,652	\$ 7,551
France	9,086	7,940	7,860
Germany	3,540	2,334	2,253
Ireland	3,310	3,311	3,434
Switzerland	2,290	1,735	1,918
China	22,998	22,465	23,656
Total:	\$ 50,303	\$ 44,437	\$ 46,672

### Customers

We sell a wide variety of sensor products throughout the world to a broad range of end-user markets and customers. We design, manufacture and market sensors for original equipment manufacturer applications and for end users who use them for instrumentation and test applications. Our extensive customer base consists of manufacturers of electronic, automotive, medical, military, industrial, aerospace and consumer products. We have developed our strong market position due to, among other factors, our long-standing customer relationships, our competitive cost structure, and our geographic proximity to customers with our engineering, sourcing and manufacturing facilities located in North America, Europe and Asia. Our largest customer, Sensata, a large automotive sensor supplier, accounted for approximately 13% of our net sales during fiscal 2011, approximately 16% of our net sales during fiscal 2010, and approximately 14% of our net sales during fiscal 2009. At March 31, 2011 and 2010, the trade receivable with our largest customer was approximately \$2,574 and \$3,651, respectively. No other customer accounted for more than 10% of our net sales during the fiscal years ended March 31, 2011, 2010 and 2009.

### Sales and Distribution

We sell our sensor products through a combination of experienced regional sales managers, distributors and (generally) exclusive relationships with outside sales representatives throughout the world. Our engineering teams work directly with our global customers to tailor our sensors to meet their specific application requirements.

We sell our products primarily in North America, Asia and Western Europe. The percentage of our international sales relative to our overall business has grown with recent acquisitions. In addition, we believe the growing Asian market represents a significant opportunity for our business. Sales invoiced from foreign countries accounted for approximately 64%, 66% and 55% of net sales for the fiscal years ended March, 31, 2011, 2010 and 2009, respectively.

### Suppliers



We procure components and finished products from a variety of suppliers as needed through purchase orders. We actively manage this process to ensure component quality, steady supply and best costing, while managing hazardous materials content for compliance with European Restrictions on Hazardous Substances (“ROHS”) regulations.

Our manufacturing operations employ a wide variety of raw materials, including steel, copper, cast iron, electronic components, aluminum, and plastics. We purchase raw materials from a large number of independent sources around the world. No single raw material supplier is material, although some of the components we use require particular specifications where a limited number of suppliers exist that can supply such components, including wafer suppliers. Market forces, including changes in foreign currency exchange rates, can cause significant fluctuations in the costs of steel and petroleum-based products. We have attempted to mitigate the impact of cost increases through supply-chain initiatives or passing a portion of these increases on to customers in the form of price increases. There have been no raw material shortages that have had a material adverse effect on our business as a whole, although over the past few years, the prices of raw materials have been volatile and for several types of raw materials, prices increased sharply prior to the recession in 2008 before declining in late 2008 and have since increased. For a further discussion of risks related to the materials and components required for our operations, please refer to “Foreign Operations” and “Item 1A. Risk Factors.”

### Research and Development

Our research and development efforts are focused on expanding our core technologies, improving our existing products by enhancing functionality, effectiveness, ease of use and reliability, developing new products and designing custom sensors for specific customer applications. To maintain and improve our competitive position, our research, design, and engineering teams work in close association with customers to design custom sensors for specific applications. We believe that once a customer has designed one of our sensors into their products, the cost and time of switching to another supplier is high. Research and development costs approximated \$19,918 or 7.2% of net sales for fiscal 2011, \$10,626 or 5.2% of net sales for fiscal 2010, and \$10,826 or 5.4% of net sales for fiscal 2009. We expect to continue to make significant investment in research and development in order to provide innovative new products to our customers and to maintain and improve our competitive position. Customer funded research and development was \$4,809, \$2,008, and \$1,451 for the fiscal years ended March 31, 2011, 2010 and 2009, respectively.

### Competition

The global market for sensors includes many diverse products and technologies, is highly fragmented and is subject to moderate to high pricing pressures, depending on the end markets and level of customization. Most of our competitors are small independent companies or divisions of large corporations such as Danaher, General Electric, Schneider-Electric, Sensata and Honeywell. Many of the divisions of these larger corporations are also customers. The principal elements of competition in the sensor market are technology and production capability, price, quality, service, and the ability to design unique applications to meet specific customer needs.

Although we believe that we compete favorably, new product introductions by our competitors could cause a decline in sales or loss of market acceptance for our existing products. If competitors introduce more technologically advanced products, the demand for our products would likely be reduced.

### Intellectual Property

We rely in part on patents to protect our intellectual property. We own 62 United States utility and design patents and 80 foreign patents to protect our rights in certain applications of our core technology. We have 72 patent applications pending. These patent applications may never result in issued patents. Even if these applications result in patents being issued, taken together with our existing patents, they may not be sufficiently broad to protect our proprietary rights, or they may prove unenforceable. We have not obtained patents for all of our innovations, nor do we plan to do so.

We also rely on a combination of copyrights, trademarks, service marks, trade secret laws, confidentiality procedures, and licensing arrangements to establish and protect our proprietary rights. In addition, we seek to protect our

proprietary information by using confidentiality agreements with certain employees, sales representatives, consultants, advisors, customers and others. We cannot be certain that these agreements will adequately protect our proprietary rights in the event of any unauthorized use or disclosure, that our employees, sales representatives, consultants, advisors, customers or others will maintain the confidentiality of such proprietary information, or that our competitors will not otherwise learn about or independently develop such proprietary information. Despite our efforts to protect our intellectual property, unauthorized third parties may copy aspects of our products, violate our patents or use our proprietary information. In addition, the laws of some foreign countries do not protect our intellectual property to the same extent as the laws of the United States. The loss of any material trademark, trade name, trade secret, patent right, or copyright could harm our business, results of operations and financial condition.

We believe that our products do not infringe on the rights of third parties. However, we cannot be certain that third parties will not assert infringement claims against us in the future or that any such assertion will not result in costly litigation or require us to obtain a license to third party intellectual property. In addition, we cannot be certain that such licenses will be available on reasonable terms or at all, which could harm our business, results of operations and financial condition. For a discussion of risks related to intellectual property, please refer to “Item 1A. Risk Factors.”

### Foreign Operations

Our products are manufactured and marketed worldwide. Our geographic diversity enables us to leverage our cost structure and supply-chain, promotes economies of scale, and affords a broad and diverse sales base. We manufacture a large portion of our sensor products in Shenzhen, China. Sensors are also manufactured at our U.S. facilities in Hampton, Virginia, Dayton, Ohio and Fremont, California, as well as our European facilities in Galway, Ireland, Toulouse, France, Les Clayes-sous-Bois, France, Fontenay, France, Druex, France, Dortmund, Germany and Bevaix, Switzerland. The Company also has N-T, an unconsolidated joint venture in Japan. With the acquisition of Atexis, a range of our temperature sensors are manufactured at our Chengdu, China facility. A large portion of our NTC thermistors, discrete and probe assemblies are manufactured in China by Betacera Inc., a subcontractor with a long-standing contractual relationship with the Company. Many of our products contain key components that are obtained from a limited number of sources. These concentrations in external and foreign sources of supply present risks of interruption for reasons beyond our control, including political and other uncertainties regarding China.

A substantial portion of our revenues are priced in United States dollars. Most of our costs and expenses are also priced in United States dollars, with the remainder priced in Chinese renminbi (“RMB”), Euros, Swiss francs and Japanese yen. Accordingly, the competitiveness of our products relative to products produced locally (in foreign markets) may be affected by the performance of the United States dollar compared with that of our foreign customers’ currencies. We are exposed to foreign currency transaction and translation losses, which might result from adverse fluctuations in the value of the Euro, Chinese RMB, and Swiss franc. The Company’s exposure to the Hong Kong dollar mainly relates to the functional currency of MSI Sensors (Asia) Limited, the Company’s foreign holding company for the manufacturing operations in China (Shenzhen and Chengdu). The following table details annual consolidated net sales and the respective amount as a percentage of consolidated net sales invoiced from our facilities within and outside of the U.S. for the previous three years, as well as the U.S. dollar equivalent of net assets for the respective functional currencies:

	For the years ended March 31,		
	2011	2010 (As Adjusted)	2009 (As Adjusted)
<b>Net sales:</b>			
U.S. facilities	\$ 98,113	\$ 70,300	\$ 89,557
U.S. facilities % of sales	36 %	34 %	45 %
Non-U.S. facilities	\$ 176,676	\$ 134,728	\$ 110,296
Non-U.S. facilities % of sales	64 %	66 %	55 %
<b>Net assets:</b>			
U.S. dollar	\$ 72,935	\$ 61,234	\$ 54,000
Chinese renminbi	26,817	14,862	22,419
Hong Kong dollar	78,829	75,301	61,588
Euro	26,530	14,998	18,273
Swiss franc	3,958	601	996

The Chinese RMB appreciated 4.0% during the year ended March 31, 2011, and appreciated less than 0.1% and 2.5% during 2010 and 2009, respectively. The Company has more expenditures in RMB than sales denominated in RMB,

and as such, when the U.S. dollar weakens relative to the RMB, our operating profits decrease. Based on our net exposure of RMB to U.S. dollars for the fiscal year ended March 31, 2011 and forecast information for fiscal 2012, we estimate a negative operating income impact of approximately \$200 for every 1% appreciation in RMB against the U.S. dollar (assuming no price increases passed to customers, and no associated cost increases or currency hedging). We continue to consider various alternatives to hedge this exposure, and we are attempting to manage this exposure through, among other things, pricing and monitoring balance sheet exposures for payables and receivables, as well as utilizing foreign currency contracts.

The Company's French, Irish and German subsidiaries have more sales in Euros than expenses in Euros and the Company's Swiss subsidiary has more expenses in Swiss franc than sales, and as such, if the U.S. dollar weakens relative to the Euro and Swiss franc, our operating profits would increase in France, Ireland and Germany but decline in Switzerland. Based on the net exposures of Euros and Swiss francs to the U.S. dollar for the fiscal year ended March 31, 2011 and forecast information for fiscal 2012, we estimate a negative operating income impact of \$70 in Euros and a positive operating income impact of approximately \$13 for every 1% appreciation in the Euro and Swiss franc, respectively, relative to the U.S. dollar (assuming no price increases passed to customers, and no associated cost increases or currency hedging).

There can be no assurance that these currencies will remain stable or will fluctuate to our benefit. To manage our exposure to potential foreign currency, transaction and translation risks, we may purchase foreign currency exchange contracts, currency options, or other derivative instruments, provided such instruments may be obtained at prices considered suitable. We do have a number of foreign exchange currency contracts, as disclosed in Note 7 to the Consolidated Financial Statements in this Annual Report on Form 10-K. For a discussion of risks related to foreign operations and foreign currencies, please refer to "Item 1A. Risk Factors."

### Employees

As of March 31, 2011, we had 2,923 employees, including 294 in the United States, 571 in Europe and 2,058 in Asia. As of March 31, 2011, 1,818 employees were engaged in manufacturing, 690 were engaged in administration, 319 were engaged in engineering and 96 were engaged in sales and marketing.

Our employees in the U.S., Europe and Asia are not covered by collective bargaining agreements. We believe our employee relations are good.

### Environmental Matters

We are subject to comprehensive and changing foreign, federal, state, and local environmental requirements, including those governing discharges to the air and water, the handling and disposal of solid and hazardous wastes, and the remediation of contamination associated with releases of hazardous substances, as well as those relating climate change. We believe that we are in compliance in all material respects with current environmental requirements. Nevertheless, we use hazardous substances in our operations, and as is the case with manufacturers in general, if a release of hazardous substances occurs on or from our properties, we may be held liable, and may be required to pay the cost of remedying the condition. Additionally, as climate change regulations develop, the direct and indirect implications, including legal, technological, political and scientific costs, will continue to evolve the amount of any liability or added costs resulting from the foregoing matters and could be material.

We believe we are in compliance in all material respects with the European and UK Restrictions on Hazardous Substances ("RoHS") and End of Life Vehicle ("ELV") environmental directives which became effective July 1, 2006 for "the restriction of the use of certain hazardous substances in electrical and electronic equipment."

Our business and our customers may be subject to requirements under the European Commission's Proposal for the Registration, Evaluation and Authorization of Chemicals ("REACH"). REACH imposes obligations on European Union manufacturers and importers of chemicals and other products into the European Union to compile and file comprehensive reports, including testing data, on each chemical substance, and perform chemical safety assessments. Additionally, substances of high concern are subject to an authorization process per application. Authorization may result in restrictions in the use of products by application or even prohibitions on the manufacture or importation of products. REACH came into effect on June 1, 2007. The regulations impose additional burdens on chemical producers, importers, downstream users of chemical substances and preparations, and the entire supply chain. Our

manufacturing presence and sales activities in the European Union will require us to incur additional compliance costs. For a discussion of risks related to environmental matters, please refer to “Item 1A. Risk Factors.”

## Export/Import Compliance

We are required to comply with various export/import control and economic sanctions laws, including:

- The International Traffic in Arms Regulations (ITAR) administered by the U.S. Department of State, Directorate of Defense Trade Controls, which, among other things, imposes license requirements on the export from the United States of defense articles and defense services (which are items specifically designed or adapted for a military application and/or listed on the United States Munitions List);
  - the Export Administration Regulations administered by the U.S. Department of Commerce, Bureau of Industry and Security, which, among other things, impose licensing requirements on the export or re-export of certain dual-use goods, technology and software (which are items that potentially have both commercial and military applications);
  - the regulations administered by the U.S. Department of Treasury, Office of Foreign Assets Control, which implement economic sanctions imposed against designated countries, governments and persons based on United States foreign policy and national security considerations; and
- the import regulatory activities of the U.S. Customs and Border Protection.

Foreign governments have also implemented similar export and import control regulations, which may affect our operations or transactions subject to their jurisdictions. For a discussion of risks related to export/import control and economic sanctions laws, as well as the status of our disclosure of certain non-compliance with export regulations, please refer to “Item 1A. Risk Factors.”

## Backlog

At March 31, 2011, the dollar amount of backlog orders believed to be firm was approximately \$90,495. We include in backlog those orders that have been accepted from customers that have not been filled or shipped and are supported with a purchase order. It is expected that the majority of these orders will be shipped during the next 12 months. At March 31, 2010, our backlog of unfilled orders was approximately \$77,609.

## Working Capital

We maintain adequate working capital to support our business requirements. There are no unusual industry practices or requirements relating to working capital items.

## Seasonality

As a whole, there is no material seasonality in our sales. However, general economic conditions have an impact on our business and financial results, and certain end-use markets experience certain seasonality. For example, European sales are often lower in summer months and OEM sales are often stronger immediately preceding and following the introduction of new products.

## Available Information

We maintain an Internet website at the following address: [www.meas-spec.com](http://www.meas-spec.com). The information on or that may be accessed through our website is not incorporated by reference into this Annual Report on Form 10-K. We make available on or through our website certain reports and amendments to those reports that we file with or furnish to the Securities and Exchange Commission (the “SEC”) in accordance with the Securities Exchange Act of 1934. These



include our annual reports on Form 10-K, our quarterly reports on Form 10-Q and our current reports on Form 8-K. We make this information available on our website free of charge as soon as reasonably practicable after we electronically file the information with, or furnish it to, the SEC.

Item 1A. Risk Factors

Careful consideration should be given to the risks and uncertainties described below, together with the information included elsewhere in this Annual Report on Form 10-K and other documents we file with the SEC. The risks and uncertainties described below are those that we have identified as material, but are not the only risks and uncertainties facing us. Our business is also subject to general risks and uncertainties that affect many other companies, such as overall U.S. and non-U.S. economic and industry conditions, geopolitical events, changes in laws or accounting rules, fluctuations in interest rates, terrorism, international conflicts, major health concerns, natural disasters, climate change or other disruptions of expected economic or business conditions. Additional risks and uncertainties not currently known to us or that we currently believe are immaterial also may impair our business, including our results of operations, liquidity and financial condition. An investment in our common stock is speculative in nature and involves a high degree of risk. No investment in our common stock should be made by any person who is not in a position to lose the entire amount of such investment.

In addition to being subject to the risks described elsewhere in this Annual Report on Form 10-K, including those risks described below under “Liquidity and Capital Resources,” an investment in our common stock is subject to the risks and uncertainties described below.

Our operating results and financial conditions have been and may continue to be adversely affected by the financial situation and worldwide economic conditions.

The impact from the financial crisis affecting the banking system and financial markets and the uncertainty in global economic conditions have resulted in a tightening of the credit markets, a low level of liquidity in financial markets, decreased consumer confidence, high unemployment and impacted corporate profits and capital spending. These conditions make it difficult for our customers, our vendors and us to accurately forecast and plan future business activities, and have caused, and may continue to cause, our customers to reduce spending on our products. We cannot predict the strength of the economic recovery. If the economy or markets in which we operate experience continued weakness or deteriorate further, our business, financial c