

NEW US industry forecasts for 2016 & 2021

Sensors

Study # 2957

November 2012

\$5100

US demand to rise 6.1% annually through 2016

US sales of sensors are forecast to climb at a 6.1 percent annual rate through 2016 to \$14.9 billion, showing significant improvement over market performance between 2006 and 2011. Demand will be fueled by rebounds in motor vehicle and machinery production, government mandates requiring all new light vehicles to be equipped with electronic stability control and tire pressure monitoring systems, and growth in process manufacturers' shipments. Further development of and new applications for technologies like microelectromechanical systems (MEMS), optoelectronics, and photoelectronics will also help bolster sensor sales. However, the maturity of many sensor markets and improved fabrication techniques that have led to increased sensing abilities at lower costs will temper value gains. In addition, the manufacture of many sensor-laden products, such as consumer electronic devices, has moved overseas, which will further limit market advances.

Chemical property sensors among fastest growing

Process variable sensors will remain the largest product category in dollar terms in 2016, while chemical property sensors and proximity and positioning sensors will post the fastest growth. Chemical sensor sales will be boosted by technological advances that have resulted in smaller, more precise sensors at lower costs, allowing them to be used for additional applications in existing markets, as well as in a number of new markets. The rebound in motor vehicle

US Sensor Demand by Market, 2016 (\$14.9 billion)



production, and an expected increase in aftermarket demand for engine oxygen sensors, will provide growth opportunities for chemical sensors used in vehicle emission systems. Proximity and positioning sensor demand will be spurred by output gains for motor vehicles, where these devices are important components in active safety systems like electronic stability control. The renewed strength in shipments of machinery, another important market for proximity and positioning sensors, will also support sales gains.

Motor vehicles to reclaim position as largest market

In 2011, industrial applications overtook motor vehicles to become the largest major sensor market due to still low levels of motor vehicle production compared to earlier peaks. However,

thanks to a continuing rebound in motor vehicle output and new, sensor-heavy systems -- including cylinder deactivation, direct fuel injection, electronic stability control, roll-over protection, tire pressure monitoring, and variable-valve timing systems -- motor vehicles will once again become the leading sensor market, accounting for over half of all dollar gains between 2011 and 2016.

Study coverage

This upcoming Freedonia industry study, *Sensors*, is priced at \$5100. It presents historical demand data (2001, 2006 and 2011) plus forecasts for 2016 and 2021 by product and market. The study also considers market environment factors, assesses industry structure, evaluates company market share, and profiles 39 industry competitors.

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Company Profiles

This study can help you:

- Determine your market & sales potential
- Learn more about industry competitors
- Assess new products & technologies
- Identify firms to merge with or acquire
- Complement your research & planning
- Gather data for presentations
- Confirm your own internal data
- Make better business decisions

COMPANY PROFILES

Profiles 39 industry competitors such as Emerson Electric, Honeywell, Northrup Grumman, Robert Bosch, Schneider Electric and Sensata

PRODUCTS

Pressure Sensors

Sales of pressure sensors, the largest portion of the process variable sensor market, is forecast to improve on 2006-2011, as the process variable sensor market is well established, gain momentum from MEMS-based pressure sensors (combining a pressure sensor with a temperature sensor, typically temperature). Additionally, the recovery in industrial production, particularly process industries, as well as the government mandate requiring all new vehicles to be equipped with tire pressure monitoring systems (TPMS), will provide opportunities for growth. However, the maturity of this product market, improvements in production that lower costs, and price competition from imports and OEMs will temper advances.

Continuous process industries like chemical, oil and gas, and petrochemical production, are heavy users of pressure sensors, but these devices can also be found in aerospace and semiconductor manufacturing as well as automotive electronics. Additionally, certain nonindustrial markets such as health care are beginning to make use of pressure sensors.

One area of opportunity for pressure sensors is TPMS. As of model year 2012, all new vehicles sold in the US must be outfitted with a TPMS in accordance with the TREAD (Transportation Recall Enhancement, Accountability and Documentation) Act. The most popular are wheel-mounted MEMS-based sensors that measure tire pressure directly. As motor vehicle production continues to increase, OEM demand is expected to follow suit. Furthermore, manufacturers suggest that they be replaced each time a vehicle's tires are replaced, approximately once every four years; therefore aftermarket sales are also expected to be sizeable.

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SAMPLE PAGE
Explanations to support each table's numbers and forecasts

MARKETS

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MILITARY/AEROSPACE SENSOR MARKET
(million dollars)

Item	2001	2006	2011	2016	2021
Aerospace Equipment Shipments (bil \$) \$ sensors/000\$ aerospace shpts					
National Defense Expenditures (bil \$) \$ sensors/000\$ defense spending					
Military/Aerospace Sensor Market					
Physical Property					
Process Variable					
Proximity & Positioning					
Electrical Property					
Imaging					
Other					
% military/aerospace					
Total Sensor Market					

SAMPLE TABLE
Historical data for 2001, 2006 and 2011 as well as Freedonia forecasts for 2016 and 2021

Military/Aerospace Sensor Market

Sales of military/aerospace sensor market are expected to grow annually, lagging the sensor market as a whole. Stimulating growth will be an increase in use on advanced proximity and positioning sensors for military applications and thermal imaging sensors. Moderating defense spending and the decreasing cost of solid-state proximity and positioning sensors, in the face of improving performance, will serve to temper gains moving forward.

Data acquisition is a major function of many aerospace platforms. These systems rely on constant monitoring and control of an array of physical

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SAMPLE TEXT
Data illustrated with the aid of 69 tables & charts

Freedonia's methods involve:

- Establishing consistent economic and market forecasts
- Using input/output ratios, flow charts and other economic methods to quantify data
- Employing in-house analysts who meet stringent quality standards
- Interviewing key industry participants, experts and end users
- Researching a proprietary database that includes trade publications, government reports and corporate literature

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In Vitro Diagnostics

US demand for *in vitro* diagnostic (IVD) products will rise 6.1 percent annually to \$24.7 billion in 2016. Molecular diagnostic products will grow the fastest due to their advantages in the detection of infectious diseases, tumors and genetic disorders. Hospital labs will continue to comprise the largest and most diverse market. This study analyzes the \$18.4 billion US IVD products industry, with forecasts for 2016 and 2021 by type, application and market. The study also considers market environment factors, evaluates company market share and profiles industry players.

#2923..... July 2012 \$5100

Automotive Aftermarket in North America

The North American light vehicle aftermarket is projected to rise 3.2 percent annually to \$85.5 billion in 2016. The US will record the slowest gains but will represent four-fifths of the region's total sales growth. Electronics will be the fastest growing product segment. The dominant professional market will outpace the DIY segment. This study analyzes the \$73 billion automotive aftermarket in North America, with forecasts for 2016 and 2021 by country, product and service performer. The study also evaluates company market shares and profiles industry participants.

#2927..... August 2012 \$5100

Security Products

The US market for security products and systems is expected to increase 6.3 percent annually to \$19.9 billion in 2016. Electronic access control systems such as smart cards and biometrics, as well as mechanical and electromechanical locks, will post the fastest gains as new construction rebounds. The most rapid market growth will occur in the office and lodging segment. This study analyzes the \$14.6 billion US security product industry, with forecasts for 2016 and 2021 by product and market. The study also evaluates company market share and profiles industry players.

#2917..... August 2012 \$5100

Industrial Controls in China

Demand for industrial controls in China is projected to rise 13.6 percent annually through 2015 to 259 billion yuan. Advanced control products will continue to rise faster than conventional controls. Electrical and electronic equipment will be the fastest growing market, supported in part by the increasing penetration of industrial controls in this segment. This study analyzes the 137 billion yuan industrial controls industry in China, with forecasts for 2015 and 2020 by product and market. The study also evaluates company market share and profiles industry participants.

#2817..... December 2011 \$5400

Chemical Sensors

US demand for chemical sensors is projected to grow 8.9% annually through 2014. Biosensors will remain the largest product type, while electrochemical and optical sensors grow the fastest. The medical market will remain the largest end use, while the industrial market will see the fastest gains. This study analyzes the \$4 billion US chemical sensor industry, with forecasts for 2014 and 2019 by product, analyte and market. It also evaluates company market share, reviews chemical sensor technology, and profiles industry competitors.

#2716..... January 2011 \$4800

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