



2016 Top Markets Report **Industrial Automation** Country Case Study

Germany

Germany ranks third overall in this year's Industrial Automation Top Markets Report. Germany is Europe's largest economy and a top global manufacturing market. Germany benefits from a highly skilled labor force and is a staunch proponent of advanced manufacturing. Germany is also a leading supplier of machinery, motor vehicles, household appliances and other manufacturing sectors.

Overall Rank 3	U.S. Exports: 4th	Export Growth: 11th
	2012 UNIDO Industrial Competitiveness Ranking: 1st	UNIDO Industrial Competitiveness Growth Ranking: 23rd

Subsector Rankings

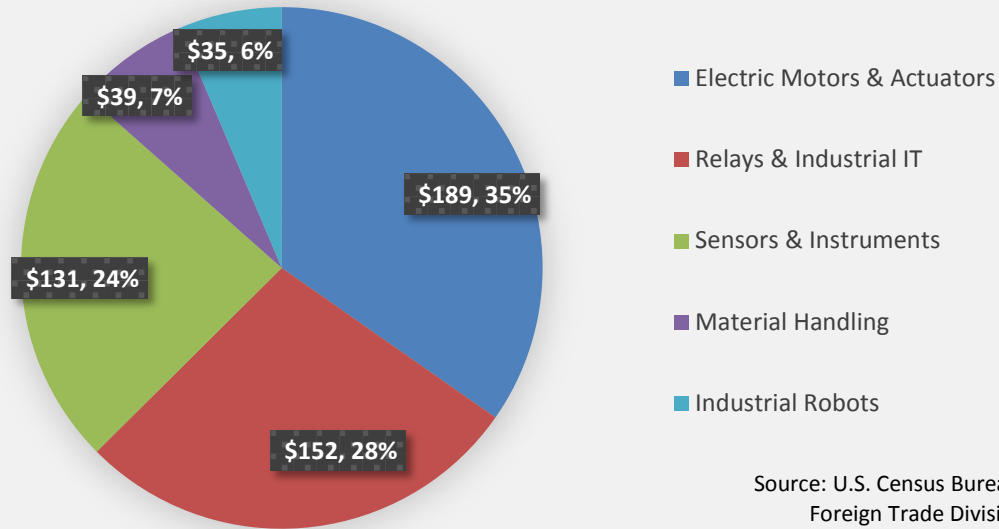
Sensors and Instruments: 4th	Electric Motors and Actuators: 6th	Electrical Relays and Industrial Controls: 4th	Material Handling: 5th	Industrial Robots: 3rd
--	--	--	----------------------------------	----------------------------------

ITA expects that U.S. industrial automation exports to Germany will grow through 2017. In 2015, U.S. exports in the sector were valued at \$545 million. Germany is the United States' largest trading partner in Europe, and exports to Germany in the sector grew greatly by 20.8 percent between 2014 and 2015. Germany is a leading proponent of harnessing automation technologies to improve manufacturing productivity, a fact most visible in the Federal

Industrie 4.0 initiative, which aims to provide funding and resources towards "smart" factories. Between 2009 and 2015, exports grew at an average annual rate (CAGR) of 8.4 percent. Despite headwinds related to currency exchange rates, sound continued growth is expected for U.S. automation exports to Germany.

Country Overview

**Figure 1: U.S. Industrial Automation Exports to Germany by Subsector, 2015
(in USD Millions)**



Germany is the economic powerhouse of Europe. It is the most populous European country with roughly 81 million residents, and it is the fourth largest global economy by GDP. Germany is a major consumer and net exporter of motor vehicles, manufacturing machinery, electrical equipment, rubber and plastics products, among more. The country’s emphasis on advanced vocational apprenticeship programs has helped to make “German engineering” synonymous with advanced precision manufacturing.

According to latest available U.N. trade data, the United States captured 5.7 percent of the German import market in 2014. The United States was Germany’s seventh largest automation equipment supplier, behind China, Hungary, Czech Republic, Switzerland, Poland, and France. Despite being one of the largest competing suppliers of automation equipment, Germany remains a growing consumer of U.S. automation exports, particularly for highly specialized items. For many companies, entering the German market is an important element of any comprehensive export strategy to Europe.

Export Overview

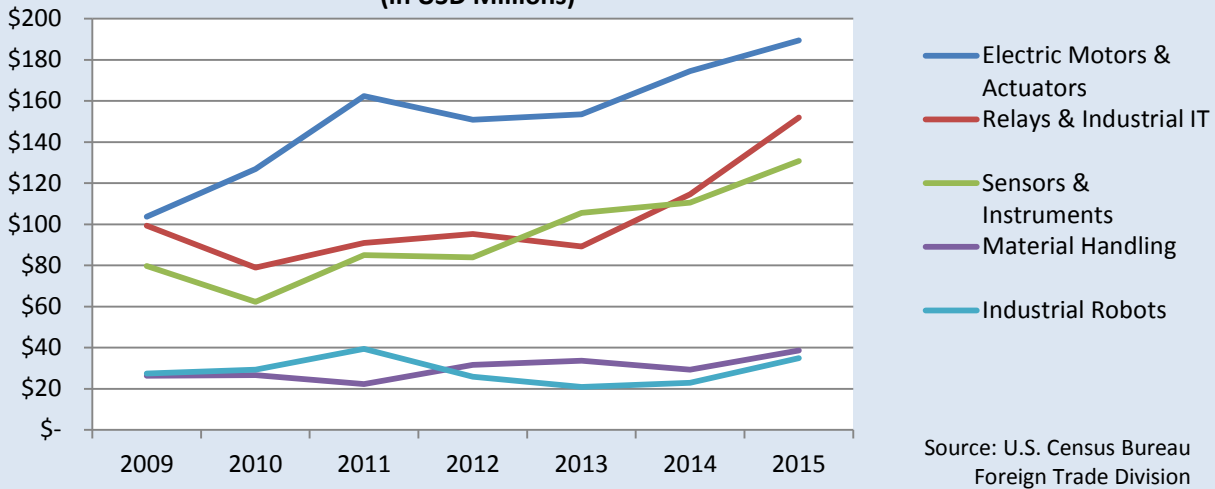
According to the VDMA (German Engineering Federation), Germany’s largest mechanical engineering trade association, excitement around the “Industrie 4.0” initiative is already beginning to translate to increased customer expectations. In the broadest sense, “Industrie 4.0” is the German-

government term for developing “Smart Factory” capabilities throughout German industry by developing cyber-physical systems. According to VDMA, the broad publicity of this government-led policy has already led to an increasing demand for networked and automated solutions.¹

This increased demand for automation equipment has been evident in U.S. export performance. In 2015, Germany was the third largest recipient of U.S. industrial robots and end-of-arm tooling, accounting for just under \$35 million in sales. Competition for industrial robots is quite high in Germany, which is home to KUKA, as well as subsidiaries of Swiss-owned ABB Robotics, Austrian-owned Stäubli, and others. According to the International Federation of Robotics, Germany had the fourth largest number of installed industrial robots in 2014, and was the largest in Europe. Despite Germany being the third largest destination for the subsector, sales of industrial robots made up the smallest proportion of U.S. automation exports to the country in 2015.

Germany is a major consumer of electrical relays and industrial IT equipment. As the fourth largest buyer in this subsector, Germany accounted for almost \$152 million in sales in 2015. Much of this growth has come from sales of programmable controllers for industrial settings (less than 1,000 Volts), which drew over \$92 million in sales in 2015. Germany is home to a number of competitor companies, for example Siemens and Robert Bosch as well as smaller multinationals such as Beckhoff Automation.

Figure 2: Annual U.S. Industrial Automation Exports to Germany, by Subsector (in USD Millions)



Purchases of U.S.-made controllers in Germany have grown at an exceptionally rapid rate of 30.1 percent per year (CAGR) since 2009. ITA expects that exports in this subsector will continue to increase through 2017.

Sensors and instruments are another growth subsector. In 2015, sales were \$130 million, making it the fourth largest purchaser of U.S.-made products in the category. Between 2009 and 2015, sales of these products grew by 8.6 percent annually (CAGR). Major competitors include SICK AG, Siemens Sensor Systems, Bosch Sensortec and more. ITA expects further growth opportunity particularly through 2017. In 2015, Germany was the fifth largest recipient of U.S. material handling products, including conveyors and elevating apparatuses. Sales in this subsector were nearly \$39 million. Material handling made up a comparatively small proportion of U.S. exports. Average annual growth (CAGR) between 2009 and 2015 was 6.6 percent, and ITA projects that sales will continue to grow in this product category.

Germany was the sixth largest destination for U.S. electric motor and actuator exporters in 2015. Sales of the product category totaled \$189 million 2015, making it proportionally the largest U.S. category in Germany. Between 2009 and 2015, sales of motors and actuators had the highest combined annual growth rate of all subsectors (10.6 percent), led particularly by growth in electrical and electro-hydraulic actuators. Major competitors include Siemens, Bosch Rexroth AG, SEW Eurodrive and others.

Challenges & Barriers

Germany maintains a highly open and transparent business environment, and there are few formal market access barriers. Navigating the complex German regulatory landscape, however, can present challenges. Regulations are heavily enforced and applied consistently to both domestic and foreign suppliers.

Probably the greatest challenge to entering the German market is overcoming German electro-technical standards and conformity assessment procedures, which differ markedly from those in the United States. For most electrical components such as plugs and cables, U.S. and European standards are nonaligned. In practice, this means that for most U.S. machinery makers, the additional labor required to assemble machinery for the German market will affect pricing, inflating the price paid by the customer while decreasing the cost competitiveness compared with domestic and other European-made machines. This is also true for German manufacturers in the U.S. market, however. To date, standards remain a controversial topic between the U.S. Government and the European Commission, particularly in the context of ongoing Transatlantic Trade & Investment Partnership (T-TIP) negotiations. To overcome this obstacle, U.S. companies are advised to be well-versed in the relevant standards in place for the German market.

As part of the European Commission’s “Machinery Directive,” machinery sold throughout the EU is required to obtain a CE marking whenever the

product is covered by specific product legislation. CE stands for “*Conformité Européenne*,” and it is intended to demonstrate compliance with European safety and environmental standards.

In many regards, the intense competitive nature of the German market cannot be overlooked as a challenge. According to a joint study by McKinsey and VDMA, the largest German trade associations for mechanical engineering industries, less than one percent of German companies operate in the low-price segment. The remainders operate in the medium or premium-price segment, with 64 percent identified as operating in only the premium.ⁱⁱ As a result, the competitive landscape for U.S. firms is quite stiff, and success is highly dependent on superior quality product offerings and robust localized customer service.

Know Your Buyer

In Germany, arguably more so than any other country, the trade fair is critical to facilitating commerce, especially among larger items like capital goods. Germany is home to the world’s largest industrial trade show, the Hannover Messe, as well as many of the largest vertical international trade events in the world, such as METAV and AMB. All told, trade fairs provide near unmatched exposure in the German market.

Germany fosters a free market system, and there are no regulations to bind U.S. exporters to a particular sales channel. Direct sales or indirect sales through distributors, agents, commercial representatives and more are the norm, and the country’s transparent business climate make conducting due diligence more efficient.

ⁱ Juliane Friedrich “Growth for German Intralogistics Providers in 2015” VDMA February 23, 2016.
<http://foerd.vdma.org/article/-/articleview/12176609>

ⁱⁱ McKinsey/VDMA “The Future of German mechanical engineering”, pg. 28

National and Regional Trade Shows

HANNOVER MESSE

April 25-29, 2016 — Hannover Exhibition Grounds, Hannover, Germany

<http://www.hannovermesse.de/home>

Sensor + Test, Nuremberg

May 10-12, 2016 – Nuremberg, Germany

<http://www.sensor-test.de/welcome-to-the-measurement-fair-sensor-test-2016/>

CeMAT – Intralogistics + Supply Chain

May 31-June 3, 2016 – Hannover, Germany

<http://www.cemat.de/>

Automatica – Robotics and Mechatronics

June 21-24, 2016 – Munich, Germany

www.automatica-munich.com

AMB Stuttgart

September 13-17, 2016

<http://www.messe-stuttgart.de/amb/>

K – Trade Fair for Plastics and Rubber

October 19-26, 2016 – Düsseldorf, Germany

<http://www.k-online.com/>

VISION – Machine Vision

November 8-10, 2016 – Stuttgart, Germany

www.messe-stuttgart.de/en/vision/

SPS IPC Drives

November 22-24, 2016 – Nuremberg, Germany

https://www.mesago.de/en/sps/for_visitors/welco me/index.htm

METAV

February 20-24, 2018 – Düsseldorf, Germany

www.metav.com