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# Circuit Breakers & Fuses

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US Industry Study with Forecasts for **2011 & 2016**

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Study #2252 | October 2007 | \$4400 | 182 pages

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**The Freedonia Group**

767 Beta Drive

Cleveland, OH • 44143-2326 • USA

Toll Free US Tel: 800.927.5900 or +1 440.684.9600

Fax: +1 440.646.0484

E-mail: [info@freedoniagroup.com](mailto:info@freedoniagroup.com)

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*Electric power will be the largest and second fastest growing market for circuit breakers and fuses through 2011, driven by increased investment in electric distribution and transmission infrastructure.*

## US demand to grow 3.7% annually through 2011

US demand for circuit breakers and fuses is forecast to grow 3.7 percent per year through 2011 to \$3.6 billion. Stronger outlooks for construction of nonresidential buildings and electric utilities will boost demand for circuit breakers and fuses, aiding the recovery from the fall in demand experienced between 2000 and 2003. Circuit breakers will advance more quickly than fuses, led by strong growth in power circuit breakers.

## Nonresidential construction, electric power to be fastest growing markets

The fastest growing market through 2011 will be the nonresidential construction market, with annual growth of 6.1 percent. This rebound from the losses experienced between 2001 and 2006 will follow from the dramatic resurgence of industrial construction through 2011. Electric power will be the largest and second fastest growing market for circuit breakers and fuses, reaching \$1.2 billion in 2011 on annual growth of 4.2 percent. Growing demand in the electric power industry will be driven by increased investment in electric distribution and transmission infrastructure, spurred by favorable regulation activity and the growing demand for electric power. The expanding electric power market will especially benefit demand for fuses, generating over one-half of new demand for fuses in 2011.

## Circuit Breaker & Fuse Demand (\$3 billion, 2006)



Circuit Breakers  
74%

Fuses  
26%

## Power circuit breakers offer best growth prospects

Power circuit breakers will be the fastest growing product segment through 2011, reaching \$930 million on annual gains of 5.5 percent. Faster growth in both utility and nonresidential building construction will be the primary reason for the recovery of power circuit breaker demand from its stagnant growth between 2001 and 2006. By 2011, power circuit breakers will account for one-third of total circuit breaker demand.

Demand for molded case circuit breakers (i.e., assembled as one piece and enclosed in a housing) will account for one-half of total circuit breaker and fuse

demand in 2011. Increases in demand for molded case circuit breakers will benefit from faster growth of nonresidential building construction, and in particular, the strong rebound in industrial building construction. Demand for industrial molded case circuit breakers will experience annual gains of 4.7 percent after a nearly equal decline between 2001 and 2006.

High-power fuses will be the fastest growing fuse type through 2011, with annual gains of 2.4 percent, driven by stronger construction activity in both electric power and nonresidential markets. Demand for distribution cutouts will closely follow, as electric utilities increase distribution infrastructure investment to improve reliability.

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## Sample Text, Table & Chart

### CIRCUIT BREAKERS

#### Molded Case Circuit Breakers

US demand for MCCBs is forecast to expand through 2006 at a rate of 2.5 percent annually to \$1.5 billion. This strong rebound will be driven by the declines of the 2001-2002 nonresidential construction market for trial MCCBs. Demand will also recover as they continue to be more interested in durable goods. Demand for residential construction will slow as it weak through 2006.

**SAMPLE  
TEXT**

US production of MCCBs has expanded more slowly than over the 2001 to 2006 period, as imports of MCCBs have accounted for an increasing share of demand. The two largest suppliers of the US market are Mexico and the Dominican Republic. The Dominican Republic also accounts for the majority of US MCCB exports, assembling them before shipping them back to the US. Other major markets for US MCCB exports include Canada, Western Europe, and the Asia/Pacific region. Manufacturers of MCCBs include ABB, Carling Technologies, Cooper Industries, Eaton, Fuji Electric, General Electric, L-3, Littelfuse, Schneider, Schurter, Sensata, and Tyco Electronics.

Molded case circuit breakers are defined as a circuit breaker assembled as a single unit entirely enclosed by an insulated housing. Molded case circuit breakers are used to protect the circuitry of buildings and products with electrical components. MCCB frame sizes can range up to 4,000 amperes, with voltage ratings at up to 600 volts, although interrupting capacities can range as high as 100,000 amperes. They are available in one-, two- and three-pole configurations, and some offer current-limiting or time-delay capability. At lower current ratings a magnetic trip element supplements the thermal device.

TABLE VI-1

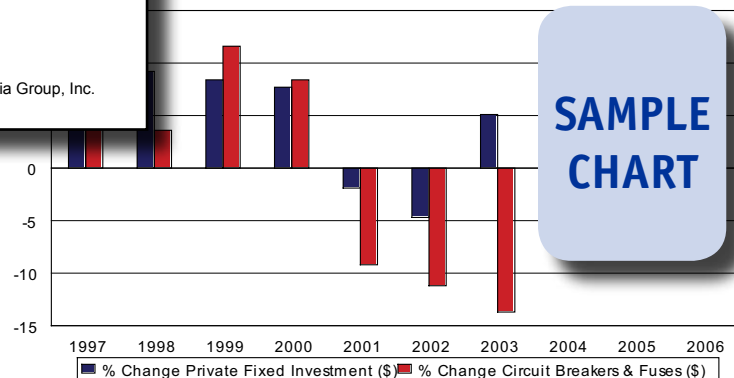
### FUSE SUPPLY & DEMAND (million dollars)

Item	1996	2001	2006	2011	2016
Durable Goods Shipments (bil \$)	1902	2048	2395	2680	3045
\$ fuses/000\$ shipments	0.39	0.33	0.32	0.31	0.29
Fuse Demand					
High-Power					
Cartridge & Plug					
Electronic					
Other Fuse Types					
Parts & Accessories					
- imports					
+ exports					
Fuse Shipments					
price deflator (2000=100)					
Fuse Shipments (mil 2000\$)					

**SAMPLE  
TABLE**

CHART II-2

### CIRCUIT BREAKER & FUSE MARKET, 1997-2006 (percentage change)



**SAMPLE  
CHART**

## Sample Profile, Table & Chart

**TABLE VII-5**  
**NONRESIDENTIAL CONSTRUCTION MARKET FOR CIRCUIT BREAKERS & FUSES**  
 (million dollars)

Item	1996	2001	2006	2011	2016
Nonresidential Bldg Constr (bil \$)	20	22	25	28	30
\$ CB&F/000\$ constr	2	2	2	2	2
Nonresidential Market					
By Product:					
Circuit Breakers					
Fuses					
By Source:					
New Construction					
MRO					
% nonresidential	2	2	2	2	2
Circuit Breaker & Fuse Demand	26	26	26	26	26

### COMPANY PROFILES

#### Powell Industries Incorporated

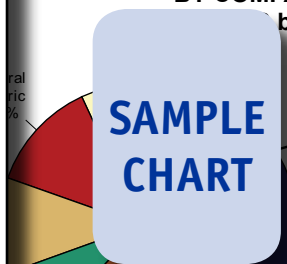
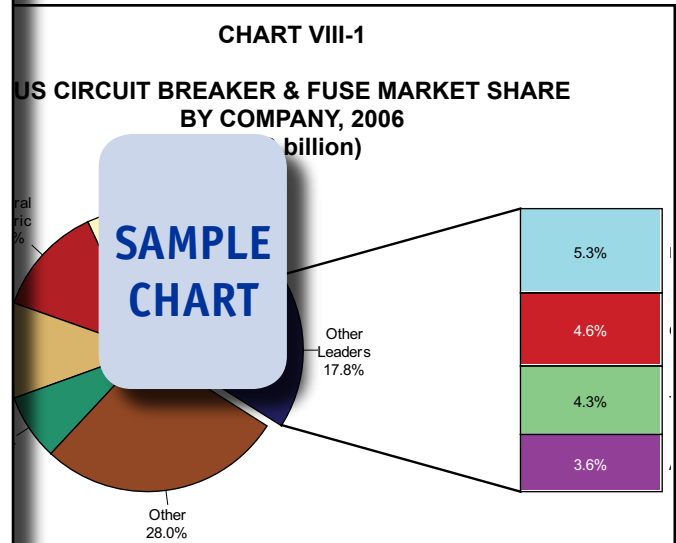
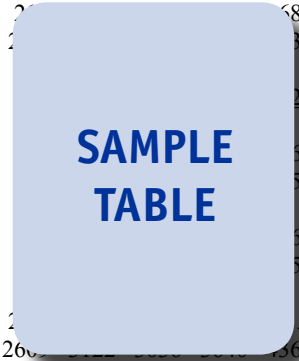
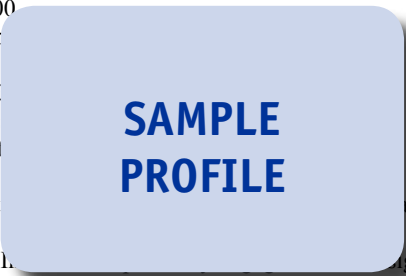
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Revenues: \$  
 US Revenue  
 Employment

Key Product

Powell Industries designs and production of systems and equipment for the generation, distribution, control and management of electric power. The Company operates through two segments: Electrical Power Products and Process Control Systems.

The Company is active in the US circuit breaker and fuse industry through the Electrical Power Products segment, which generated revenues of \$348 million in FY 2006. The segment's products include POWLVAC metal-clad circuit breakers, which are part of the POWER/VAC line of self-contained switchgear units that feature waterproof housing, and reliable arc interruption, high-resolution oscillography and high impedance fault detection. The metal-clad circuit breakers are designed in a range of 5- to 38-kilovolt (kV) models. In addition, Powell Industries manufactures 5kV and 15kV replacement breakers, which are intended to replace vertical-lift air circuit breakers. These circuit breakers include newly produced frames, bushings, interlock mechanisms and secondary disconnects for installation into existing equipment, and are marketed as alternatives to retrofitting, refurbishing or converting existing circuit breakers.



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**World Electric Power Equipment**

World electric transmission and distribution equipment demand will rise 4.4% annually through 2011. The industrial and commercial sector will see the strongest gains as cogeneration proliferates and products such as high voltage transformers become more common outside of the utility sector. This study analyzes the \$85 billion world electric power equipment industry, with forecasts for 2011 and 2016 by product, market, world region and for 17 countries. It also details market share and profiles major players.  
 #2261 ..... 10/2007..... \$5400

**Electric Transmission & Distribution Equipment**

US electrical transmission and distribution equipment demand will rise 3.6% yearly through 2011. Growth in nonutility generation and an improved regulatory outlook supporting investment in the electric grid will aid gains. Specialty transformers and metal-clad and -enclosed switchgear will lead gains. This study covers the \$17.5 billion US electrical transmission and distribution equipment market, with forecasts for 2011 and 2016 by product and market. It also details market share and profiles major firms.  
 #2198 ..... 07/2007..... \$4400

**World Fuel Cells**

Global fuel cell spending (R&D, investment, sales) will grow 15% yearly through 2011. Portable electronics will be the fastest growing commercial use while electric power generation will stay the largest. Proton-exchange membrane fuel cells will remain dominant over other chemistries. This study analyzes the \$5.2 billion world fuel cell industry to 2011 and 2016 by product, chemistry, application, world region and for 14 countries. It also reviews technology, evaluates market share and profiles major players.  
 #2194 ..... 05/2007..... \$5500

**Batteries**

US demand for primary and secondary batteries will grow 4.3% annually through 2011. Growth will be driven by strong demand for battery-powered products and motor vehicles, and by an ongoing shift toward more expensive, better-performing batteries. Primary batteries will outpace secondary/rechargeable types, led by primary lithium batteries. This study analyzes the \$12.1 billion US batteries industry to 2011 and 2016 by product and market. It also evaluates market share and profiles major producers.  
 #2178 ..... 03/2007..... \$4500

**Solar Energy Products**

US demand for photovoltaic modules will more than triple by 2010, driven by innovations, economies of scale and government subsidies. Crystalline silicon cells will remain dominant while thin films will post stronger growth. Thin films use little or no silicon and can integrate photovoltaics within roofing shingles and other building materials. This study forecasts US solar energy product demand to 2010 and 2015 by product, market and region. It also evaluates market share and profiles major producers.  
 #2126 ..... 12/2006..... \$4300

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