ELECTRICAL POWER: ELECTRICAL PROTECTION & CONTROL
Electrical Power

- We are a leader in electrical power management
- We are a global partner offering our customers the best solutions thanks to our expertise and in-depth knowledge of their applications
## Markets

### Industry
- Drives
- Motors & Generators
- Process Industries
- HVAC
- Welding
- Machine Tools
- Oil & Gas

### Transportation
- Railway
- Marine
- EV/HEV
  - Heavy Duty
  - Passenger
- Aeronautics

### Electricity
- Solar
- Wind
- Conventional
- EES
- Power Back-up / UPS
- Power Quality
- HVDC
- Transmission
- Distribution
- Lighting

### Defense
- Missile
- Aircraft
- EV/HEV
- Communication
- Radar

### Data/Telecom
- Datacenter
- Video Surveillance
- Wireless 3G/4G
- Radar
- Broadcasting
## COMPETITIVE STRENGTHS

<table>
<thead>
<tr>
<th>Generation</th>
<th>Transmission</th>
<th>Distribution</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vestas</td>
<td>ABB</td>
<td>Fuji Electric</td>
<td>ALSTOM</td>
</tr>
<tr>
<td>SMA</td>
<td>SIEMENS</td>
<td>Rockwell Automation</td>
<td>BOMBARDIER</td>
</tr>
<tr>
<td>ABB</td>
<td>EDF</td>
<td>EATON</td>
<td>ABB</td>
</tr>
<tr>
<td>SIEMENS</td>
<td>RXPE</td>
<td>TMEIC</td>
<td>SIEMENS</td>
</tr>
<tr>
<td>HITACHI</td>
<td>ALSTOM</td>
<td>EMERSON</td>
<td>SIEMENS</td>
</tr>
<tr>
<td>VOITH</td>
<td>Schneider Electric</td>
<td>TESLA</td>
<td>CRRC</td>
</tr>
<tr>
<td>Gamesa</td>
<td>EACO</td>
<td>TESLA</td>
<td>CD</td>
</tr>
<tr>
<td>SENVION</td>
<td></td>
<td></td>
<td>SAfran</td>
</tr>
</tbody>
</table>

### Mersen’s Advantages

- Global Presence
- Brands
- Product Portfolio
- Technical Services
- Specification
- Customer Care
- Digital
APPLICATION-ORIENTED BUSINESS MODEL

ELECTRICAL POWER IS COMPRISED OF TWO BUSINESS UNITS EACH ADDRESSING SPECIFIC APPLICATIONS WITH A BROAD BUT COHERENT PRODUCT PORTFOLIO:

- **Solutions for Power Management (SPM)**
  - SPM designs innovative and application engineered solutions for OEMs in the Power Electronics and Power Distribution markets, integrating high performance cooling, signal & power bus bars, and semiconductor protection fuses

- **Electrical Protection and Control (EPC)**
  - EPC provides a reliable and differentiating global platform of electrical protection and controls components and services serving OEMs, panel builders, utilities, contractors, and end-users in LV and MV power distribution markets
EPC PRODUCT PORTFOLIO

UL FUSES & FUSEGEAR
- Low Voltage Fuses
- Medium Voltage Fuses
- DC Fuses
- Solar Fuses
- Fuse Holders, PDBs
- PV Combiner Boxes
- Fused Coordination Panels

IEC FUSES & FUSEGEAR
- Low Voltage Fuses
- Medium Voltage Fuses
- DC Fuses
- Solar Fuses
- Fuse Holders
- PV Combiner Boxes
- DIN Fuse Switch Disconnectors

SURGE PROTECTION
- UL SPD
- IEC SPD
- Solar SPD
- Components (TPMOV®)

POWER TRANSFER FOR RAIL VEHICLES
- Earth Return Current Units
- Current Collectors
- Fuse Boxes
- Connection Boxes
- On-board Switches
EPC VALUE PROPOSITION

Differentiating Global Platform of Electrical Power Components
Supporting Power Quality, Management, Safety and Reliability

POWER DISTRIBUTION
Panel Builders | Utilities | OEM

POWER CONTROLS
Panel Builders | OEM

SALES CHANNELS
Distributors | Brand Label | Direct

CONNECT
PROTECT
SWITCH
MONITOR
EPC INDUSTRIAL FOOTPRINT

As of December 31, 2015

**AMERICAS**
- CANADA: TORONTO
- MEXICO: JUAREZ
- USA: EL PASO, LOUISVILLE

**EUROPE**
- CZECHIA: SEZEMICE
- FRANCE: SAINT BONNET, GORCY, SAINT LOUP
- HUNGARY: KAPOSVAR
- SPAIN: TERRASSA
- TUNISIA: TUNIS

**ASIA**
- CHINA: GUANGZHOU, YUEQING
- INDIA: BANGALORE
**Mersen Expertise**

*We bring expertise to our customers with products and solutions designed to meet or exceed their expectations.*

*We differentiate by helping our customers:*  
- Protect electrical systems and people who use them  
- Improve electrical safety, performance, and reliability  
- Reduce system downtime  
- Develop technical solutions that increase competitiveness  
- Reduce investment costs, total cost of ownership, and working capital  
- Increase global capacity  
- Seize opportunities in emerging markets
# Group History

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1885</td>
<td>The Fabius Henin plant is built (electric motors, dynamos, and lamps).</td>
</tr>
<tr>
<td>1892</td>
<td>Le Carbone is founded in Paris and specializes in the manufacture of brushes for motors.</td>
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<tr>
<td>1895</td>
<td>Graphitization process is discovered by a Group engineer.</td>
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<td>1897</td>
<td>First International subsidiary is set up in Germany.</td>
</tr>
<tr>
<td>1905</td>
<td>First team is deployed in the United States.</td>
</tr>
<tr>
<td>1915</td>
<td>Fabius Henin became Compagnie Lorraine de Charbons pour l'Electricité</td>
</tr>
<tr>
<td>1927</td>
<td>&quot;Le Carbone&quot; and &quot;Compagnie Lorraine de Charbons pour l'Electricité&quot; merge to become Groupe Carbone Lorraine.</td>
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<tr>
<td>1935</td>
<td>The chemical engineering business is started up in Pagny sur Moselle</td>
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<tr>
<td>1937</td>
<td>Le Carbone Lorraine takes over the worldwide distribution of products for Ferraz</td>
</tr>
<tr>
<td>1950</td>
<td>The Amiens plant is built to manufacture carbon brushes for electric motors.</td>
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<tr>
<td>1955</td>
<td>Pechiney moves above the 50% ownership mark. The industrial seal business is transferred to Carbone Lorraine.</td>
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<tr>
<td>1958</td>
<td>Ferraz is acquired.</td>
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<tr>
<td>1991</td>
<td>Stackpole's [United States] electrical and high-temperature applications assets are acquired.</td>
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<tr>
<td>2007</td>
<td>Changning plant, the Group's first manufacturing facility in China, is inaugurated.</td>
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<tr>
<td>2008</td>
<td>Calcarb, the world nº2 in rigid carbon felt, is bought.</td>
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<tr>
<td>2010</td>
<td>Positions are strengthened in solar energy through the purchase of a majority shareholding in Yantai.</td>
</tr>
<tr>
<td>2015</td>
<td>A majority shareholding in Boostec, a silicon carbide specialist, is acquired.</td>
</tr>
<tr>
<td>2010</td>
<td>CARBONE LORRAINE CHANGES ITS NAME TO Mersen</td>
</tr>
<tr>
<td>2014</td>
<td>Majority stake in Cirprotec, spec. in lightning/SPD ASP, Chinese leader overvoltage protection, acquired</td>
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</tbody>
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