ABB is a leader in power and automation technologies that enable utility and industry customers to improve their performance while lowering environmental impact.

The ABB Group of companies operates in around 100 countries and employs about 150,000 people.

ABB offers a wide range of high-voltage products up to 1,200 kV that help enhance the reliability, efficiency and quality of power in transmission and distribution grids, power plants and industries while minimizing environmental impact. The wide product range is complemented by a comprehensive service offering.

ABB pioneered high-voltage GIS in the mid-1960s and continues to drive technology and innovation, offering a full range product portfolio with voltage levels from 72.5 kV to 1,200 kV. As a market leader in high-voltage GIS technology, ABB has a global installed base of more than 23,000 bays.

ABB products and services have a long history in Czech Republic since 1970. The company currently employs 3,300 people in eight locations. ABB Czech Republic has a strong production base which includes manufacturing facilities in Prague, Brno, Ostrava, Trutnov, Jablonec and Nisou, four R&D centers and two engineering centres.

The high-voltage bus ducts manufacturing facility occupies 12,500 square meter employs around 200 employees. It contains supply chain management, engineering, production including a modern powder coating line, assembly, testing and logistics.

Our product portfolio

High-voltage bus ducts for GIS
High-voltage bus ducts are key components for GIS mainly used for indoor or outdoor connection of gas-insulated substation to overhead lines, transformers and cable interface.

The Brno facility manufactures bus ducts for GIS voltage ranges from 72.5 kV up to 550 kV.

The facility also manufactures other components for GIS such as:
- Connecting elements in all shapes and sizes: cross-shaped and T-elements, as well as simple straight sections
- Compensators that are used for heat expansion, vibrations during operation and tolerances in the lengths of specific components
- Lateral dismantling units to guarantee hassle-free assembly and dismantling

Production facility highlights
- State-of-the-art technology for welding of aluminium to casting for production of pressure vessels, containing X-ray technology for welding seam check with high pressure and tightness testing
- Lean production with continuous improvement process
- Component production to customer specifications (i.e enclosures, conductors)
- Semi-automatic powder coating line
- Entire production process designed for 12 m exit bus ducts

<table>
<thead>
<tr>
<th>Portfolio</th>
<th>Product</th>
<th>Voltage level [kV]</th>
<th>Rated current [A]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-transmission</td>
<td>ENK-3</td>
<td>72.5</td>
<td>2500</td>
</tr>
<tr>
<td></td>
<td>ELK-04</td>
<td>145</td>
<td>2500</td>
</tr>
<tr>
<td></td>
<td>ELK-04</td>
<td>170</td>
<td>4000</td>
</tr>
<tr>
<td>Transmission</td>
<td>ELK-14 C</td>
<td>245</td>
<td>3150</td>
</tr>
<tr>
<td></td>
<td>ELK-14</td>
<td>300</td>
<td>4000</td>
</tr>
<tr>
<td></td>
<td>ELK-3 C</td>
<td>420</td>
<td>5000</td>
</tr>
<tr>
<td></td>
<td>ELK-3</td>
<td>420</td>
<td>5000</td>
</tr>
<tr>
<td></td>
<td>ELK-3</td>
<td>550</td>
<td>6300</td>
</tr>
</tbody>
</table>

1 Connecting elements (bus ducts) | 2 ELK-3 C, 420 kV assembly unit | 3 ENK-3 assembly unit
Common flow production line with one-piece flow and pull concept
The powder coating line, assembly, testing and packaging are divided into a number of takt stations. All work steps are standardized and optimized to reach highest quality standards, efficiency and safety.

Lean administration and manufacturing, just-in-time, one-piece flow, Kaizen and theory of constraints are being applied to achieve the highest industry standards such as:
- Shortest delivery times
- Reliable on-time delivery
- Highest quality level
- Rapid response to customer requirements
- Highest cost efficiency
- Best performance

Tailor made semi-automatic powder coating line for products up to 12 m in length
Parts are coated in high tech powder coating line following takt production. A submersible pre-treatment process together with powder coating ensures the highest quality of paint adhesion.

Testing facilities
The test lab in Brno has the capability to test up to 760 kV for GIS, including partial discharge detection, according to IEC 62271-203 and IEC 62271-1 standards. All products are fully tested using X-ray, pressure and He-leakage. Final high-voltage, partial discharge and SF₆ leakage tests are conducted on all products before they leave the assembly area.

Finished goods stock
The bus ducts are produced, packed and stored in the facility. Deliveries of the bus ducts are synchronized according to when they are required at site, thus saving additional logistic costs and efforts for customers.
Engineering centre
The engineering centre in Brno comprises of three engineering departments: offer engineering, steel support engineering and engineering support. Additionally, it supports the manufacturing facility in Brno, field operations and other ABB entities around the world.

Offer engineering
Design of GIS layouts which includes basic civil interface and cost calculation for voltage levels up to 800 kV.

Steel structure engineering
Design and calculation of steel structures for GIS based on international standards.

Engineering support
Provides support in the field of design for GIS voltage levels up to 800 kV.