
















# Transformers




## Global product offering

ABB is a major transformer manufacturer throughout the world and offers both liquid-filled and dry-type transformers as well as services for complete life-cycle support, including replacement parts and components. Our portfolio allows utilities and industrials to maximizing the return on transformer assets by ensuring a high reliability, reducing life cycle costs and ensuring optimized performance while lowering environmental impact.

Product / Offering	Benefits and features	Suggested applications
<p><b>Insulation and components</b></p> <p><b>Transformer Insulation</b></p> <p>Pressboard and press paper and speciality paper manufacturing, press board kits, Pressboard components, composites, flexible laminates</p> 	<p>We have been the supplier of choice for over 100 years by meeting the diverse needs of a global markets. We offer interactive tools for configuring products, downloading literature and selecting replacement parts.</p>	<p>Our insulation materials find various applications from small voice coils in speakers to all types of electric motors, distribution and power transformers. For example: electric motors, switchgear, entertainment electronics, transformers, capacitors, packing industry and paper processing industry.</p>
<p><b>Press board press paper and speciality paper</b></p> <p>We supply pressboard in sheets and presspaper in rolls for production of output transformers and distribution transformers.</p> 	<p>Components and insulating sheets of pressboard are used in oil-cooled power transformers and distribution transformers primarily due to their high purity, mechanical strength and optimal oil-impregnability. The components formed of pressboard, such as angle rings, snout segments and end leads, enable an exact adaptation to the electric field conditions prevailing in the transformer.</p> <p>Especially in the sector of high field strengths, the dimensional stability and good dielectric features are of great advantage. Special forming and pressing procedures are employed in the manufacturing technology of the pressboard components.</p>	
<p><b>Pressboard Kit</b></p> <p>Cylinders, supporting cylinders, strrips, spacers, angle rings and caps, corrugated boards, duct spacing, static rings</p> 	<p>The kits are delivered to the winding machine complete with all necessary components for assembly of a winding. This cost-effective system saves our customer time and labor and solves the problem of limited floor space. More and more OEM's are taking advantage of this opportunity by switching from ordering individual components to pre-assembled kits.</p>	

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<p><b>Pressboard Components</b></p> <p>Cylinders, supporting cylinders, strrips, spacers, angle rings and caps, corrugated boards, duct spacing, static rings</p> 	<p>A soft pressboard variant is used to mould parts with complex geometries. The material is soaked and will then be dried under compression on moulding mandrels or between tools to form various specified shapes.</p>	
<p><b>Composites</b></p> <p>Composite insulators and composite components</p> 	<p>ABB develops and manufactures Power Composites – high performance insulating components made of fiber composite materials for power and high voltage applications. ABB has a long history of working with composite materials dating back to 1918.</p>	
<p><b>Flexible Laminates</b></p> <p>Flexible insulating sheets are employed in electrical machines for layer insulation, slot insulation and interphase insulation.</p> 	<p>As a result of the general trend towards performance increase, these materials are submitted to high electrical and thermal stresses. Good mechanical strength is the prerequisite for automatic processing by the customer. These demands are met in particular by combined flexible insulating materials in multi-layer structures of pressboard, polyester and polyimide foils, of aramide papers and various non-woven fabrics.</p>	
<p><b>Transformer Components</b></p>		
<p><b>Bushings</b></p> <p>Bushings up to 1200 kVAC and 1000 kVDC, tap changers, on-load and de-energised, distribution and power transformer components, measurement and safety devices.</p> 	<p>ABB uses the world's most advanced bushing technologies. ABB is without question the largest bushing producer in the world.</p>	<p>The ABB low voltage bushings are designed for use on pad or surface mounted distribution transformers. They serve to terminate the transformer's internal low voltage leads at the tank wall and to provide a standard threaded connection for the external low voltage circuit. The ABB High Voltage Bushing Well is designed for use in pad or surface mounted transformers. It is designed to terminate the leads from the primary winding at the tank wall and to mate with all bushing inserts meeting the applicable ANSI/IEEE 386-1995 Standards.</p>
<p><b>Tap Changers</b></p> <p>On-load tap changers and motor-drive mechanisms, de-energised tap-changers</p> 	<p>ABB has manufactured more than 30,000 tap changers since the production started in 1910. With 4 factories, we are represented all over the world.</p>	<p>Tap changers are used for voltage regulation during on load operations and off load conditions.</p>
<p><b>Fuses and fuse holders</b></p> <p>Fuses and fuse holders</p> 	<p>ABB distribution products are one of our key links to success in today's technological world.</p>	

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<p><b>Load Break switches</b></p> <p>Oil immersed load break switches</p> 	<p>The ABB Type "LBOR-II" switch is a manually operated, two position, load make or break, oil immersed rotary switch. The LBOR-II switch is designed for use with distribution transformers (pad mounted or submersible) and self contained distribution switchgear. The LBOR-II switch is designed to provide high reliability, strength, and operating current performance.</p>	<p>The LBOR-II switch is designed for use with distribution transformers (pad mounted or submersible) and self contained distribution switchgear.</p>
<p><b>Measurement and prevention safety devices</b></p> <p>Measurement and prevention safety devices</p> 	<p>Solutions for longer and reliable transformer lifetime.</p>	<p>Keeping the transformer safe by providing input of condition of oil in the transformer and generally making sure that condition of transformer is known before it worsens.</p>
<p><b>Oil treatment plants</b></p> <p>Vacuum indoor oil treatment plant</p> 	<p>Keep transformers reliable and healthy.</p>	
<p><b>Dry type transformers</b></p> <p><b>Dry-type transformers</b></p> <p>Cast resin distribution transformers. On demand ABB design and produces any type of protection, cooling method with forced air or water, suitable for different electrical application like VSD and Excitation.</p> 	<p>ABB offers a full range of dry-type transformers with primary voltages through 72.5 kV built according to all major standards including IEC and ANSI. To minimize environmental contamination and fire hazard, customers are specifying dry-type transformers more frequently. These transformers meet strict parameters with respect to electrical system demands and functioning in areas with extreme climatic conditions. ABB's dry and cast transformers are virtually maintenance free and are manufactured in accordance with industry and international standards including ISO 9001. On demand ABB design and produces any type of protection, cooling method with forced air or water, suitable for different electrical application like VSD and Excitation.</p>	<p>To minimize environmental contamination and fire hazard.</p>
<p><b>Low-voltage transformers</b></p> <p>Single and three phase transformers. 5 to 1000 kVA up to 1000 V IEC or IEEE standard – Copper or Aluminum windings – protection degree IP00 or IP23. Inductors for filters and power quality devices in conjunction with capacitors</p> 	<p>Compact and economical solution within the low voltage range.</p> <p>Vacuum Pressurized Impregnation (VPI) for a perfect and safe insulation – many application are possible, isolation, voltage adapter, change in standard typical voltages.</p> <p>Special, assemblies or customized solution are also available on demand.</p>	<p>These transformers are present in domestic and industrial market, they could be used for lighting, auxiliaries and main application. Inductances AC or DC are used for filtering and rephasing devices.</p>
<p><b>PoleDry</b></p> <p>Three phase dry polemount ratings 50-160 kVA, up to 24 kV</p> 	<p>Same functionality than the traditional oil polemount transformers, PoleDry are also mounted above ground on poles. These transformers typically service urban and rural loads, where safety, ecology are the first. Besides they don't burn and explode as well as have no oil leakages. They are not attractive for copper and oil thefts.</p>	<p>These transformers typically service urban and rural loads, to minimize environmental contamination and fire hazard.</p>

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<p><b>Oil type transformers</b></p> <p><b>Single-phase distribution transformer (Liquid filled, 1-Phase, Pole-mounted and Pad-mounted)</b></p> <p>Primary voltage Up to 36 kV; range up to 315 kVA</p> 	<p>ABB liquid-filled, single-phase distribution transformers are specifically designed for networks where it is not practical to have a three-phase supply.</p>	<p>They are typically used for servicing residential overhead distribution loads. They are also suitable for light commercial loads, industrial lighting and diversified power applications.</p>
<p><b>Small distribution transformer (Liquid Filled, SDT; Pole-mounted, Ground-mounted, pad-mounted, substation)</b></p> <p>Primary voltage Up to 36 kV; range up to 315 kVA</p> 	<p>Small distribution transformers are typically oil-immersed and suitable for pole-, pad- or ground-mounting. They represent an economical option for certain networks, particularly those with low population densities. Depending upon requirements, transformers may be connected between two phases of a three-phase system (two high voltage bushings) or from one phase to ground (single high voltage bushing).</p>	<p>The units are suitable for residential overhead distribution loads, as well as light commercial or industrial loads and diversified power applications.</p>
<p><b>Medium distribution transformer (Liquid Filled, MDT, Pole-mounted, Ground-mounted, pad-mounted, substation)</b></p> <p>Primary voltage Up to 36 kV; range from 316 up to 2499 kVA</p> 	<p>Medium distribution transformers are used to step down three-phase high voltage to low voltage for energy distribution, mainly in the countryside or low-density populated areas. The transformers are three-phase, oil-immersed hermetically sealed, adaptable for pole-mounting or assembly in substations. On request, the transformer can be equipped with an oil conservator and the transformer tanks surface can be hot dip zinc coating.</p>	<p>Medium distribution transformers are used to step down three-phase high voltage to low voltage for energy distribution, mainly in the countryside or low-density populated areas.</p>
<p><b>Large medium distribution transformer (Liquid Filled, LMDT, Ground-mounted, Pad-mounted)</b></p> <p>Primary voltage Up to 36 kV; range from 2500 up to 10 MVA</p> 	<p>Large distribution transformers are used for receiving energy from higher voltage levels and to transform and distribute this energy to lower voltage substations or directly to large industrial consumers. Transformers in this range are three-phase and can be manufactured with off-circuit tap changer or on-load tap changer. Transformers provided with on-load tap changer usually have a separate tap winding.</p>	<p>Large distribution transformers are used for receiving energy from higher voltage levels and to transform and distribute this energy to lower voltage substations or directly to large industrial consumers.</p>
<p><b>LV VSD (Low Voltage Variable Speed Drive, Liquid Filled)</b></p> <p>Power range: up to 10 MVA/High voltage: up to 36 kV/Low voltage: typically between 380V and 1kV/ Number of pulses: from 6 to 12-pulse</p> 	<ul style="list-style-type: none"> <li>- Adapts the network supply voltage to the converter input voltage</li> <li>- Isolates the converter from feeding network and limits short circuit currents to the converter</li> <li>- Relieves the motor and/or network from common mode voltages</li> <li>- Reduces radio interference (EMC) from drive to the network (special screen)</li> <li>- Protects the drive from voltage transients from the feeding network</li> <li>- Reduces harmonics (transformer impedance and special connections for multi-pulse operation)</li> <li>- Provides efficiency and reliability to the total system</li> <li>- Applicable for any type of drive</li> </ul>	<ul style="list-style-type: none"> <li>- Blowers &amp; fans</li> <li>- Conveyors</li> <li>- Compressors</li> <li>- Rolling mills</li> <li>- Extruders, mixers</li> <li>- Marine application</li> <li>- Mine hoists</li> <li>- Pumps</li> <li>- Refiners</li> <li>- Hydro turbine start</li> <li>- Soft starters</li> <li>- Test stands</li> <li>- Wind tunnels</li> </ul>

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# Contact us

## **ABB**

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