High Voltage Instrument Transformers
Innovative measurement, control, and power solutions
Day after day, year after year reliability—
with ABB Instrument Transformers

ABB has been producing instrument transformers for over 50 years. Thousands of our products perform vital functions in electric power networks around the world – day after day, all year round. Their main applications include revenue metering, control power, indication and relay protection.

All instrument transformers supplied by ABB are tailor-made to meet the needs of our customers. An instrument transformer must be capable of withstanding very high stresses in all climatic conditions. ABB designs and manufactures our products for a long, trouble-free service life.
Benefits

With the largest offering of instrument transformer products in North America through 765 kV, we have optimally-engineered designs that will meet your needs.

**Instrument Transformer product types**
- Top Core (Head Type) Current Transformers
- Combined Current/Voltage Transformers
- Inductive Voltage Transformers
- Capacitive Voltage Transformers
- Station Service Voltage Transformers

**Flexible design enables customer-tailored solutions**
- All units are tailored for specific applications and comply with latest IEEE C57.13 specification to operate accurately at steady state conditions and maintain reliability up to extreme fault level conditions
- Different tank sizes and insulator types, expansion systems, primary windings and core configurations make it possible to meet varied customer requirements

**Easy transportation, installation and commissioning**
- ABB instrument transformers feature reduced dimensions, requiring less substation space
- Facilitate safer transportation and handling
- Installation is typically limited to the connections needed, and civil works is often confined to a small platform

**Maximum reliability and minimal maintenance**
- Dielectrically stringent production includes hermetically sealed design with 100% partial discharge testing
- Low loss design results in excellent ratio transformation
- High insulation and pollution level
- 100% leak tested with fully degassed and low water content oil
- Low partial discharge controlled by shield-graded design

**Designed for a wide range of conditions, from polar to desert climates and high altitude or seismic applications**
- Specially-designed with extra strike insulators suitable for high altitudes
- Reinforced porcelain, robust support structures and mechanically robust construction to withstand high demands of seismic acceleration without the need for dampers

**Excellent application engineering support**
- Local and global ABB industry and application support
- ABB’s vast experience and expertise helps ensure optimum solutions for each application
Applications

High Voltage Instrument Transformers

- Revenue metering for electric utilities, independent power producers, or industrial users
- Protective relaying for use with switchgear to monitor system current and voltage levels
- High accuracy wide current range use for independent power facilities
- Substation auxiliary power and remote load power needs
- Line discharge of de-energized lines to take trapped-charges to ground

- Monitoring fault level currents accurately with air coupled cores
- Compact distribution size instrument transformers with robust insulation system for medium voltage
- Three-phase adapter kit for single phase voltage transformers to replace obsolete three-phase units
- Voltage support and short-line fault using coupling capacitors
- High frequency voltage measurement on renewable installations using special power quality sensors
### High voltage oil-filled products

<table>
<thead>
<tr>
<th>Type</th>
<th>Name</th>
<th>Voltage level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current transformers</strong></td>
<td>COF</td>
<td>25 - 161 kV</td>
<td>– Substation Class oil-filled top core current transformer for metering or relaying application.</td>
</tr>
<tr>
<td></td>
<td>CA</td>
<td>230 - 525 kV</td>
<td>– Porcelain insulator with high creep and high strike design (polymer as an option).</td>
</tr>
<tr>
<td><strong>High accuracy extended range current transformers</strong></td>
<td>CXM</td>
<td>25 - 525 kV</td>
<td>– Special high accuracy wide measurement range oil-filled top core current transformer for metering extremely wide load swings in the same 0.15% accuracy class.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>– Range is provided by special materials in Type COF and CA series.</td>
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<tr>
<td><strong>Inductive voltage transformers</strong></td>
<td>POF</td>
<td>25 - 115 kV</td>
<td>– Substation Class oil-filled inductive voltage transformer with shield graded insulation.</td>
</tr>
<tr>
<td><strong>High accuracy voltage transformers</strong></td>
<td>UTE</td>
<td>138 - 525 kV</td>
<td>– High creep and high strike reliable cycloaliphatic epoxy bushing at 69 kV and lower, porcelain at 115 kV (with polymer available as an option).</td>
</tr>
<tr>
<td><strong>Coupling capacitor voltage transformers</strong></td>
<td>DDB</td>
<td>69 kV - 525 kV</td>
<td>– Substation Class oil-filled capacitive voltage transformer with capacitive divider for isolation from the high voltage circuit.</td>
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<tr>
<td></td>
<td>DDK</td>
<td>69 kV - 525 kV</td>
<td>– Units supplied in porcelain insulators (polymer as an option) with hermetically sealed capacitor stacks.</td>
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<tr>
<td><strong>Station service voltage transformers</strong></td>
<td>SSVT</td>
<td>46 - 345 kV</td>
<td>– Substation Class oil-filled station service voltage transformer with high creep and high strike reliable porcelain insulators (polymer available).</td>
</tr>
<tr>
<td></td>
<td>SSMV</td>
<td>46 - 170 kV</td>
<td>– Power windings (Up to 333 kVA) with HV transformer design with graded insulation and ground shield between HV and LV circuit.</td>
</tr>
<tr>
<td><strong>Single phase combined current/voltage transformers</strong></td>
<td>JS</td>
<td>15k - 38 kV</td>
<td>– Distribution Class oil-filled current/voltage combined metering transformer with compact format.</td>
</tr>
<tr>
<td></td>
<td>KA</td>
<td>46 - 230 kV</td>
<td>– CT windings combined with VT windings for metering for pole top or platform mounting in substation.</td>
</tr>
<tr>
<td><strong>High accuracy extended range current/voltage transformers</strong></td>
<td>JXM</td>
<td>15 - 34.5 kV</td>
<td>– Distribution Class oil-filled (CLASS 0.15S) high accuracy wide measurement range current/voltage combined metering transformer with compact format.</td>
</tr>
<tr>
<td></td>
<td>KXM</td>
<td>46 - 230 kV</td>
<td>– Special core/coil design capable of measuring accurately over a wide current swing.</td>
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<tr>
<td><strong>Three phase combined current/voltage transformers</strong></td>
<td>MVCT</td>
<td>15 - 46 kV</td>
<td>– Distribution Class three phase oil-filled current/voltage combined metering transformer with compact format.</td>
</tr>
<tr>
<td></td>
<td>MXM</td>
<td>15 - 46 kV</td>
<td>– CT windings combined with VT windings for three phase metering.</td>
</tr>
</tbody>
</table>
Commitment to quality and safety

ABB High Voltage Products have been certified by UL DQS, Inc. to fulfill the requirements of Quality management system ISO 9001, Environmental management systems ISO 14001 and Occupational health and safety management system OHSAS 18001.

Testing
All of our instrument transformers are tested to the latest IEEE C57.13 standards. Units complying with CSA or IEC rated standards can also be provided, depending on the specific application. Standard product test criteria for partial discharge (PD) performance ensures quiet designs.

Formal certified test reports are issued on each serialized transformer to provide documentation of the accuracy performance of each design. Accuracy performance is reported on certified test reports and is traceable to industry standards.

Eco-efficiency
Our eco-efficient instrument transformers are manufactured from metal parts that are recyclable, reusable, and corrosion resistant. Oil content is also minimized in the hermetically sealed design, which prevents breathing, oil sludging, or oxidation over time. All oil used is tested and certified to be PCB free.

Most configurations have porcelain insulators with extra creepage distance as standard for contaminated environments. Many designs can be offered in polymer bushings.

Safety
To improve substation safety, current transformers and single phase metering units feature a specially-designed reinforced configuration to help minimize damage in the unlikely event of internal faults.
Commitment to our customers – Partners in success

In addition to our product technology, ABB proudly stands with our customers via our global service organization. ABB offers significant risk management opportunities, in order to reduce our customers project risk profile. We are your partner in the project, with unsurpassed experience, to ensure you reach your milestones.

ABB’s unequaled global product scope can make project management more manageable. Our ability to offer product packages, or product bundling, can assist your team in bringing your substation vision to reality.

With programs and services within the high voltage instrument transformer product offering, we provide tangible benefits to back up our commitment to offer excellent value to your team:

- Superior technical support to guide users to the most cost-effective and right-sized solutions.
- Multi-year product blanket contracts ensure efficient sourcing solutions to provide value for future projects.
- HV services and accessories, such as support stands, offered as part of our product solution to clear problems in difficult projects.

With a focus toward your concerns about inventory management, ABB offers:

- Some of the most competitive lead-times in the industry.
- Defined stocking program on the most critical elements of your substation; inductive and capacitive voltage transformers, high accuracy single phase metering units, and station service voltage transformers.
- Preferred reserved production slots for alliance partners to support critical timelines.

Coordination for your project using ABB’s packaging can provide:

- Cost-effective solutions from a well-respected global leader in engineered products.
- Improved project management supported by your local ABB sales/engineering team.
- Product packages with rebates to reward the more you purchase.
- Close coordination of our packaged offers ensure seamless operation of the discrete elements of your substation.

ABB offers a lot to our customers - because you should expect it. We are focused on meeting and exceeding your expectations in all of our product solutions.
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