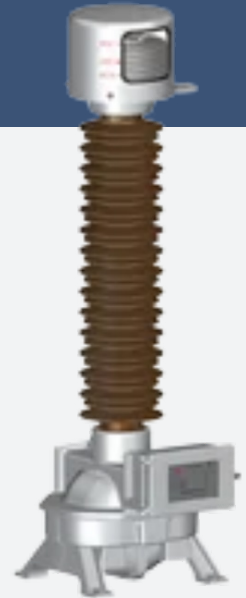




Instrument Transformers

CT • VT • CVT

Instrument transformers provide accurate current and voltage scaling for metering, protection, and system control in high-voltage networks. They safely isolate secondary circuits from primary systems while delivering precise measurement signals required by relays, meters, automation devices, and communications systems. The portfolio includes oil-immersed CTs (LVB, LB), SF₆-insulated CTs (LVQB), oil-immersed inductive VTs (JDCF), and capacitor voltage transformers (TYD), supporting voltage levels from 35 kV up to 1100 kV depending on the product family.



What's in the Range

CT — LVB Oil-Immersed Inverted CT (36–550 kV)

Through-rod primary, accuracy to 0.1, thermal current up to 63 kA/3 s, cast-aluminium housing, maintenance-free.

CT — LB Oil-Immersed Hair-Pin CT (31.5–252 kV)

U-shaped primary, 4–6 secondary windings, stainless-steel expander, external series/parallel switching.

CT — LVQB SF₆-Insulated CT (110–550 kV)

Inverted SF₆ design, explosion-relief disc, density monitoring, leakage <0.5%/year, optimized shielding.

VT — JDCF Oil-Immersed Inductive VT (40.5–550 kV)

Low magnetic density design to avoid ferro-resonance, capacitor-graded insulation, available with residual-voltage coil.

CVT — TYD Capacitor Voltage Transformer (40.5–1100 kV)

Fast ferro-resonance suppression (within ~10 cycles), PLC-ready, cast-aluminium tank, integrated MV switching option.





CT Core & Primary Conductor

Through-type primary conductors with high dynamic stability (up to 63 kA/3 s) and high-permeability microcrystalline alloy cores for accuracy.



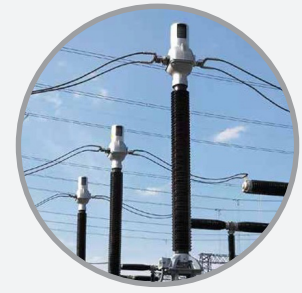
VT Electromagnetic Unit

Inductive VTs use oil-paper insulation with capacitor grading screens to manage electric fields and minimize dielectric loss.



CVT Capacitor Divider

Stacked capacitor elements (oil-insulated, aluminium foil) form the high-voltage divider, delivering stable capacitance and temperature-insensitive dielectric properties.



Sealed Enclosures & Expanders

CTs and VTs use cast-aluminium housings and stainless-steel expanders for pressure compensation and long-term sealing integrity.

Functionality & Options

- **Current measurement (CT):** accurate scaling of primary currents for metering and protection, with multi-secondary capability.
- **Voltage measurement (VT):** stable, low-loss inductive voltage transformation for protection and control devices.
- **Capacitive Volume TX communications (CVT):** CVTs provide coupling capacitor functionality and ferro-resonance damping for reliable PLC communication.
- **Residual voltage detection (VT):** optional residual-voltage coils support directional earth-fault functions.
- **Multiple winding configurations:** metering, protection, and communication windings can coexist in one device.
- **Accuracy classes:** 0.1, 0.2, 0.2S, 0.5, 0.5S, 5P, 10P, TPY, TPS (CT); 0.2, 0.5, 3P for VTs; and multiple accuracy/burden combinations for CVTs.
- **Secondary windings:** up to six (CT), including metering, protection, and residual windings.
- **Burden ratings:** VA options for CTs, VTs, and CVTs including 10–300 VA or higher depending on model.
- **Environmental builds:** pollution class W2/W3, high-altitude variants, cold-climate adaptations, and corrosion-resistant finishes.
- **PLCC options:** CVTs can include Capacitive Volume TX terminals and integrated damping units.



Key Components

- **CT Core & Primary Conductor:** Through-type primary conductors with high dynamic stability (up to 63 kA/3 s) and high-permeability microcrystalline alloy cores for accuracy.
- **VT Electromagnetic Unit:** Inductive VTs use oil-paper insulation with capacitor grading screens to manage electric fields and minimize dielectric loss.
- **CVT Capacitor Divider:** Stacked capacitor elements (oil-insulated, aluminium foil) form the high-voltage divider, delivering stable capacitance and temperature-insensitive dielectric properties.
- **Sealed Enclosures & Expanders:** CTs and VTs use cast-aluminium housings and stainless-steel expanders for pressure compensation and long-term sealing integrity.



Technical Specifications


Category	Typical Values
Voltage range	36–550 kV (CT/VT) and 40.5–1100 kV (CVT)
CT accuracy	0.1 / 0.2 / 0.2S / 0.5 / 5P / 10P / TPY / TPS
CT thermal/dynamic withstand	Up to 63 kA/3 s and 160 kA dynamic
VT voltage factors	1.2 continuous / 1.5–1.9 for 30 s depending on model
CVT accuracy/burdens	10–300 VA typical; supports PLCC applications
Insulation levels	PF withstand up to 740–1200 kV; LI withstand up to 1675–2400 kV (highest CVT classes)
Enclosure sealing	IP55 secondary terminal boxes; cast-aluminium housings; stainless-steel expanders

Selection Checklist

- **Select device type:** CT, VT, or CVT depending on application.
- **Choose accuracy class & burden:** Metering vs protection; VA rating.
- **Specify primary rating:** Primary current for CTs; primary voltage for VTs/CVTs.
- **Confirm environment:** Pollution class, altitude, temperature, coastal exposure.
- **Select mechanical design:** Tank/bushing form factor, mounting, terminal orientation.

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