



LTCs and Regulators

utility | industrial | commercial

*Automatic Load Tap Changing and
Regulating Transformers*

Individual solutions | from a global perspective.



VIRGINIA TRANSFORMER CORP

www.vatransformer.com



What you need, Where you need it, When you need it.

When you choose Virginia Transformer Corp (VTC) as your supplier for Automatic Load Tap Changing (LTC) Transformers and Regulators, you can be certain you'll receive a product that is expertly designed, manufactured, installed and serviced. Our company engineers high-quality, efficient, long-life units with turnaround times unparalleled in the industry, thanks to our global manufacturing capabilities. To our top-quality products, exceptional customer service, and quick turnaround, VTC offers a total commitment to your individualized solutions.

Since our origins in 1971, VTC has successfully grown our product line and capabilities to meet the needs of our ever-expanding customer base. We now offer our utility, industrial, and commercial clients a product range from 300 KVA to 300 MVA in dry-type transformers, and liquid-filled units with primary voltage to 230 KV. We've been designing and manufacturing LTC transformers since 1987.

OUR TOTAL COMMITMENT TO INDIVIDUALIZED SOLUTIONS

Our highly qualified sales staff helps you find the best solution for your transformer application. They work closely with our electrical and mechanical engineers, who design every transformer to meet or exceed each customer's application requirements.

When you choose VTC as your supplier for LTC transformers and regulators, you can count on our total commitment to individualized solutions. Our engineers will expertly design a unit to your precise requirements, including:



- **Windings:** VTC offers barrel or disc winding types for either HV or LV windings using either copper or aluminum conductors. We typically provide circular coils for greater short circuit withstand strength, but rectangular coils are available for smaller KVA units.
- **Cores:** Customers can choose from a variety of core lamination materials and core stacking configurations to optimize losses and sound levels.
- **Oil Preservation:** VTC offers three types of oil preservation systems: sealed tanks, conservators and automatic (nitrogen) positive-pressure systems.

NO ONE IN THE INDUSTRY DOES IT FASTER

VTC is proud to offer one of the shortest delivery times in the industry. We routinely deliver automatic LTC transformers and 3-phase Voltage Regulators in as little as 12 weeks.



- **Tap Changer Types:** VTC offers resistive-type LTC systems for lower current applications, reactive-type LTC systems for mid-range sizes and vacuum systems for high-current applications.
- **Switch Location:** We can design our units with the LTC switch electrically connected on the low voltage winding, as is common in the US, or on the high voltage winding, as is standard in Europe and Asia.
- **Tap Range:** As our standard adjustment, we arrange taps for sixteen above and below the rated voltage at 5/8% increments for a total of +/- 10%. We also provide increased adjustment ranges and incremental steps as needed.
- **Control Systems:** We offer local or remote, automatic or manual control systems for single or multiple (parallel) applications. If required, we can provide line monitoring, time delays, supervisory control and SCADA interfaces in our controls. VTC also offers remote indication of tap position via selsyn, current-loop analog output, digital position indication or multi-contact position indicator rows. In addition, we design our transformers for the utmost convenience when locating bushings, indicators and controls.

HIGH-QUALITY, EFFICIENT, LONG-LIFE UNITS

We're proud of our products. In addition to ISO 9001 certification, we require all our manufacturing facilities to utilize rigorous process control and continuous improvement standards, including a zero-defect goal. We perform frequent in-process checks as well as final testing per ANSI. We offer IEC or CSA standards and testing optionally.

For high dielectric and short-circuit strength and maximum efficiency, our electrical engineers optimize core and coil designs by selecting the most appropriate type of construction for the application.

We design our winding dielectric systems for maximum

3-phase Voltage Regulators



Virginia Transformer Corp also offers a special variety of Automatic Load Tap Changing transformer – the Three-phase Voltage Regulator. Our customers use regulators both in distribution applications and to maintain voltage over transmission lines. Since the voltage ratio is nearly one to one, the regulator's basic design differs from that of an LTC in that it is wound as an autotransformer. When designing and constructing our regulators, we employ the same criteria and standards used for our conventional LTC units. VTC offers 3-phase voltage regulators to 50 MVA throughput and 46 KV class. VTC provides custom-designed regulators on an ongoing basis to such notable utilities as Carolina Power & Light and Entergy.

protection against voltage spikes. VTC units can withstand high impulse voltage by utilizing electrostatic shielding at winding ends. We carefully dry our transformer coils under highly controlled conditions to remove moisture and complete the insulation bonding process. We then braze or weld winding connections. Finally, we firmly support and tie all leads from the coils to the tap changer and bushings.

For optimum efficiency and minimized sound level, VTC incorporates mitered-joint and/or step-lap core construction utilizing an appropriate grade of cold-rolled, grain-oriented silicon steel laminations.

We design and fabricate our tanks to withstand forces that exceed normal transformer operating conditions. This attention to detail ensures all of our units offer superior reliability and reduced maintenance hassles.

VTC houses the LTC switch in a separate compartment with its own oil supply. This housing isolates the mechanism from the main transformer oil compartment, easing maintenance and repairs.

Our reactive-type LTC system uses a preventive autotransformer, housed in the main transformer tank, which is connected to the main low voltage winding and regulator windings. Our preventive autotransformer limits the circulating current in the transformer winding each time a tap change occurs. Our resistive-type LTC system places resistors in the circuit to limit circulating current during the tap change.

All our LTC systems have separate selector and diverter contacts. Our designs include a series of precisely aligned gears to make sure all arcing occurs on the transfer switch, with none on the diverter contacts. For high-current applications, we contain our selector contacts in a vacuum bottle for longest life and to guard against contamination of the LTC compartment oil.

OPTIONS UPON OPTIONS

- Reconnectable windings on non-regulated winding
- Non-standard impedance
- Epoxy, polyurethane paint in your choice of color
- Galvanized radiators
- Terminal throats and chambers
- Shock indicator
- Dissolved gas monitor
- CTs and PTs for metering and relaying
- Customer-specific controls and relays

EXCEPTIONAL CUSTOMER SERVICE

Meeting our commitment to the customer has been the prime objective at VTC for three decades. From our experienced sales organization to our highly trained production teams, you can count on every VTC employee to make their best effort on the customer's behalf.

You can rely on highly skilled VTC field service technicians to provide all on-site erection and commissioning services, from installation to oil processing and oil filling to testing. We offer warranty and preventive maintenance services as well. All of our technicians are fully versed in transformer manufacturing and testing procedures and are equipped with a fully fitted rig for on-site installation and testing. We also maintain designated service shops across the US. VTC service is literally at your fingertips 24 hours a day, 7 days a week with a call to our dedicated toll-free service hotline.



VIRGINIA TRANSFORMER CORP

220 Glade View Drive Roanoke, VA 24012 USA (540)345-9892 fax (540)342-7694 www.vatransformer.com