

Substation

VanTran Substation Transformers are in service around the globe with many satisfied customers. Base ratings are available from 100kVA to 10MVA with voltages from 120V to 35kV. Our units can be found in a variety of industries including offshore oil production, military installations, industrial and steel plants, and manufacturing facilities. Special application designs are our specialty for temporary power needs, hazardous environment locations, and countless other demanding applications.

Core and Coil

The core and coil is the heart of the transformer. VanTran utilizes a rectangular coil and five-legged wound core design with three coils and four core loops on three phase units, and one coil and two core loops on single phase designs.

Low-voltage windings are strip copper or aluminum, laminated with thermally upgraded kraft paper. High short-circuit capability and longer life are inherent in transformers with strip windings where axial forces are eliminated by the balance of magnetic centers. Lead pads and tap pads are 100% rag pressboard, also thermally upgraded. Start and finish coil leads are either mig welded copper or aluminum bus bar, or slit from the strip conductor, depending upon the current rating.

High-voltage windings use round or rectangular magnet wire. Copper and aluminum wire are film insulated with heavy formvar. Aluminum rectangular wire is insulated with double spiral-wrapped thermally upgraded kraft paper.

Cores are made with non-aging grain-oriented silicon steel. All cores are stress relief annealed in the size and shape required. As a result, core losses in VanTran transformers are the lowest obtainable.

Cooling ducts are liberally spaced to minimize conductor gradient and reduce hottest spot temperatures.

Tank, Bushings, and Accessories

All VanTran transformers feature sealed tank construction with welded on covers and conform to NEMA and ANSI C57.12 standards, where applicable. Skid mounting is available as an option.

Numerous bushing options are available including cover-mounted, sidewall-mounted, Full Air Terminal Chambers or throat connections to switchgear.

In addition to standard NEMA accessories, some of our options are:

- FR3 or equal fluid
- Nitrogen Pressurization Systems
- Stainless Steel Tank, Cabinets and Hardware
- Class 1, Division 2 Protection
- Dual Voltage and Special Taps
- Factory mounted switches and breakers
- K-Factor designs for Drive applications
- Neutral Grounding Resistors



Padmount

Tank, Bushings, and Accessories

VanTran was at the forefront of development of Padmount Transformers over 50 years ago. They are available in the same size range and voltages of our Substation designs – up to 10MVA and 35kV primary voltages. Our units feature high security, three-point latching, pad-lockable double door compartments with full length steel center partitions and penta-head (REA) security bolts. This ensures secure access to the high voltage compartment.

Bushings can be externally clamped wet process porcelain or epoxy, depending on application. VanTran offers a full range of both dead front and live front components to fit your needs.

VanTran Padmount Transformers can be customized with endless accessory options but come equipped as standard with:

- Schrader Valve for Nitrogen Blanket
- Externally Operated Tap Changer
- Jacking Pads
- One Inch Fill Plug
- One Inch Drain Valve (Built in Sampler on 750 kVA Units and Larger)
- Tank Grounding Pads (1/2" -13 Tapped Holes)
- Base Designed for Rolling
- Diagrammatic Corrosion Resistant Nameplate
- Automatic Pressure Relief Valve
- Undercoating on Bottom of Transformer to Prevent Corrosion

A range of options are available such as stainless steel, special paint colors, compartment mounted low voltage circuit breakers, load break switches, etc.

