UNICLAD® Transformers

VIRGINIA TRANSFORMER CORP

www.vatransformer.com

TRANSFORMER FEATURES

Range – Up to 15 MVA, 35 kV voltage class, 150 kV BIL

Loading – Designed to deliver rated current and MVA in all tap positions

Service – Indoor

Basic Impulse Level (BIL) – Per ANSI standard

Impedance – ANSI standard

Coils – Aluminum or copper conductor, circular construction

Paint – ANSI 61 enamel on phosphatized surface

Nameplate – Metalized mylar

Other – Provisions on base for lifting, jacking and skidding, stainless steel ground pads

OPTIONAL FEATURES

- Reconnectable windings
- Non-standard impedance
- Epoxy paint in your choice of color
- Fan cooling for increased MVA
- Available at 150˚C rise
- Outdoor, NEMA 3R enclosure
- TENV – For harsh environment
- Temperature Monitoring – Choose from coil winding temperature sensors and indicators, gauges or temperature controllers
- Terminations – Copper or aluminum bus with NEMA hole patterns and optional plating, flexible bus connection provisions also available
- Special flanged throats or custom air terminal chambers

PRODUCT RANGE

- Dry Type 15 MVA, 35 kV
- Uniclad® (encapsulated coils) – 15 MVA, 35 kV
- Liquid Filled – 300 MVA, 230 kV
- LTC Transformers – 300 MVA, 230 kV
- Voltage Regulators – 3-phase, 46 kV
- Drive Isolation – 50 MVA, 138 kV
- Traction Duty – 50 MVA, 138 kV
- Air Core Reactor – 15 kV

UNICLAD® BENEFITS

- Impressive 3-year warranty
- Circular design above 750 kVA
- Copper conductor – aluminum available
- 115°C rise – 80°C rise optional
- 220°C insulation class
- Distribution class kV BIL ratings
- 15 percent overload capacity without fans at 115˚ rise
- Self-extinguishing internal and external arc
- Partial discharge free to 120%
- Water submersion 24 hours
- Thermal shock – no cracks
- Humidity 100% for 48 hours
- Vibration 1.5 Gs
- Shock 30 Gs

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UNICLAD® ENCLOSURE DATA*

KVA	Width in. (mm)	Height in. (mm)	Depth in. (mm)	Weight lbs. (kg)
300	84 (2,130)	90 (2,290)	54 (1,370)	4,600 (2,090)
500	84 (2,130)	90 (2,290)	54 (1,370)	5,100 (2,300)
750	84 (2,130)	90 (2,290)	54 (1,370)	6,050 (2,750)
1,000	84 (2,130)	90 (2,290)	54 (1,370)	7,400 (3,350)
1,500	96 (2,440)	90 (2,290)	54 (1,370)	9,100 (4,120)
2,000	96 (2,440)	90 (2,290)	60 (1,520)	11,600 (5,300)
2,500	96 (2,440)	90 (2,290)	60 (1,520)	15,000 (6,800)
3,000	110 (2,800)	96 (2,440)	60 (1,520)	18,000 (8,180)
3,750	110 (2,800)	102 (2,590)	60 (1,520)	20,600 (9,300)
5,000	122 (3,100)	108 (2,740)	66 (1,680)	27,400 (12,400)
7,500	148 (3,760)	124 (3,150)	72 (1,830)	33,500 (15,250)
10,000	148 (3,760)	130 (3,300)	72 (1,830)	42,000 (19,100)
15,000	160 (4,064)	144 (3,657)	84 (2,134)	55,000 (25,000)

* Not for design purposes. Dimensions shown are for typical NEMA 1 enclosure. Smaller enclosure sizes are possible. For exact dimensions, weights, losses, features and warranty, call us.

Data is for estimating purposes only and should never be used for construction. Contact factory for actual dimensions, weights and oil volume.

UNICLAD® SPECIFICATION DATA

KVA Sizes Available	300-15,000	
Primary Voltage Classes	2.5, 5, 8.7, 15, 25, 34.5 kV	
Secondary Voltage	208Y/120, 240, 480Y/277, 480V, 2.5 kV and 5 kV Class	
Basic Impulse Level (kV)	**UNICLAD® Standard (kV)**	**Optional (kV)**
1.2	10	30
2.5	45	60
5.0	60	75
8.7	75	95
15.0	95	110
25.0	125	150
34.5	150	–
Insulation System	220˚C	–
Winding Temperature Rise	115˚C	80˚C
Impedance	5.5% - 7.5% depending on HV BIL and LV rating.	
Forced Air Rating (KVA)		
500-750	133%	–
1,100-15,000	133%	150%
Ambient Temperature Range	-40˚C to +40˚C Max.	+50˚C

COIL SEALING AND CLADDING

Each coil follows a carefully controlled, six-stage process to produce the desired level of protection. This proprietary process includes oven drying to remove moisture, vacuum-pressure impregnation with a flexible varnish, and coil end sealing with a resin mixture.

A final outer-cladding mixture of varnish, resin and silica is applied to the entire coil assembly to provide a final protective seal against the environment.

SELECTED CUSTOMERS

- Alcoa
- PPG Industries
- Powell Electric
- Eaton Corp.
- Impulse NC, Inc.
- Long Island Railroad
- Consolidated Papers
- Georgia Pacific
- New York City Transit Authority
- GE Plastics
- Unocal Oil & Gas
- Reynolds Metals Co.
- Occidental Chemical Corporation
- Grand River Dam Authority
- City of Norfolk
- GTE Data Services
- Pratt & Whitney
- Westvaco Corp.

PRODUCTION TESTS

Routine in-house tests per ANSI C57.12.91 include:

- Ratio
- Polarity
- Phase Relation
- No-Load Loss
- Excitation Current
- Impedance
- Load Loss
- Applied Voltage
- Induced Potential
- Resistance

Witness testing is offered and arranged according to your schedule

TYPICAL INDUSTRIES

- Paper Mill
- Transit
- Steel Mill
- Mining
- Hospital
- Computer Center

*Application Note: Vacuum circuit breakers switching is known to produce voltage resonance. Use appropriate caution in circuit design. (See IEEE Draft #C57.142)

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