

Open Ventilated VPI Dry-Type Transformer

Logo & Packaging Customization

Parameter & Drawing Design Customization



OPTIMIZED
PERFORMANCE



HIGH
EFFICIENCY



SUPERIOR
SAFETY



ECO
FRIENDLY



MAINTENANCE
FREE



Overview

- Safe, flame retardant, fireproof, pollution-free, can be directly installed in the load center.
- Maintenance-free, easy installation, low comprehensive operating cost.
- It has excellent moisture-proof performance, can operate normally at 100% humidity, and can be put into operation without pre-drying after shutdown.
- Low loss, low partial discharge, low noise, strong heat dissipation capacity, and can run at 150% rated load under forced air cooling.
- Equipped with a complete temperature protection control system to provide reliable guarantee for the safe operation of the transformer.
- High reliability, according to the operation research of the products that have been put into operation, the reliability index of the products has reached the international level.

Application



Hospitals & Data Centers
Uninterrupted Reliability & Fire Safety

Skyscrapers & Malls
Space-Saving & Low-Noise Operation

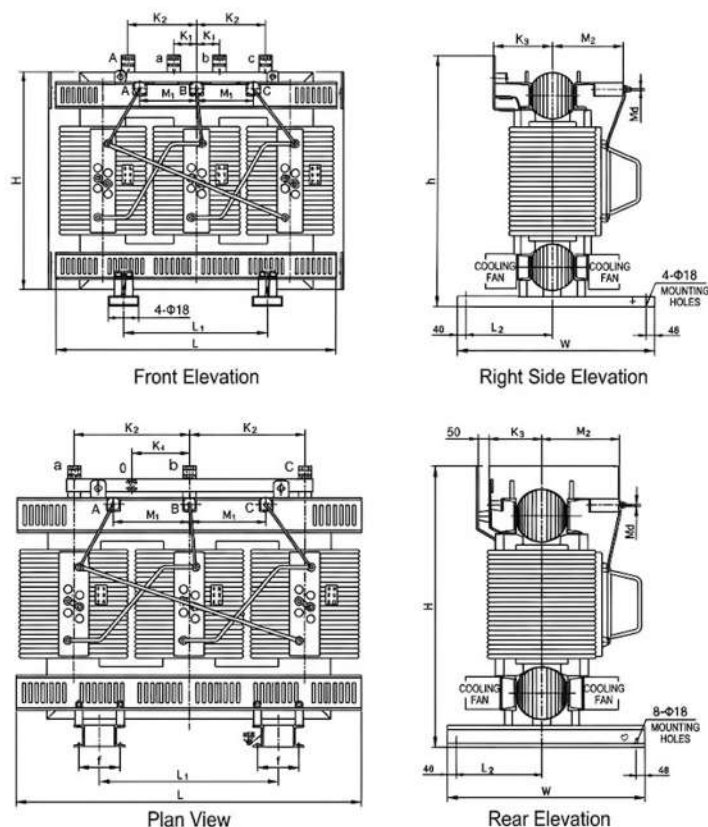


Industrial Facilities
Robust Durability & Low Maintenance

Renewable Energy
Optimized Efficiency & Environmental Resilience



Outline Drawing



Note: the size of forced air system (fan) cannot exceed the size of main body(L*W)

Accessories / Components



Technical Parameters

Table 1: Technical Parameters of 10kV Open Ventilated VPI Dry-Type Transformer
(Ideal for commercial buildings, industrial facilities, and indoor load centers)

Rated Capacity (kVA)	No-load Loss (W)	Load Loss at 120°C (W)	Impedance (%)	Noise Level (dB)	Approx. Weight (kg)
100	380	1,250	4	≤ 45	650
400	980	3,400	4	≤ 48	1,450
800	1,520	5,900	6	≤ 50	2,300
1000	1,770	7,100	6	≤ 52	2,850
1600	2,450	10,200	6	≤ 54	4,100
2500	3,600	14,800	6	≤ 56	6,200

Table 2: Technical Parameters of 35kV Open Ventilated VPI Dry-Type Transformer
(Engineered for renewable energy integration and heavy industrial grids)

Rated Capacity (kVA)	No-load Loss (W)	Load Loss at 120°C (W)	Impedance (%)	Noise Level (dB)	Approx. Weight (kg)
400	1,350	4,600	6	≤ 52	1,950
1000	2,400	8,800	6	≤ 55	3,600
1600	3,300	12,500	6	≤ 57	5,200
2500	4,800	18,200	6	≤ 60	7,800

Key Performance Highlights:

- Advanced VPI Technology:** Coils are processed via Vacuum Pressure Impregnation (VPI) with high-temperature polyester/epoxy varnish, ensuring exceptional mechanical strength, moisture resistance, and prevention of environmental contamination.
- Superior Thermal Dissipation:** The open-coil structure combined with natural draft cooling pathways eliminates localized hot spots, extending the lifespan of the Class H (220°C) insulation system.
- High Overload Capacity:** Designed to handle severe load fluctuations. When equipped with forced air (AF) cooling fans, the transformer can operate continuously at up to 150% of its base nominal rating.
- Eco-Friendly & Recyclable:** Contains no toxic dielectric fluids or solid cast resins. The non-encapsulated design inherently reduces fire hazards and allows for complete material recycling at the end of its lifecycle.

1. Cooling & Overload Capability Analysis:

Heading: Why Choose Open Ventilated VPI? (Thermal Performance)

Compared to fully encapsulated cast-resin transformers, the VPI open-ventilated design provides superior airflow, allowing for massive overload scaling without compromising the core insulation integrity.

Base Capacity (kVA)(AN Cooling)	Max Overload Capacity (kVA)(AF Cooling - 150%)	Insulation Class	Max Temp Rise Limit
1000	1,500	Class R (220°C)	150°C
1600	2,400	Class R (220°C)	150°C
2500	3,750	Class R (220°C)	150°C

2. Customization & Ordering Guide:

Heading: How to Specify Your VPI Transformer

To provide an accurate quote and engineered solution, please specify the following parameters:

- Rated Capacity:** (e.g., 100kVA to 2500kVA)
- Voltage Ratio:** (Primary Voltage / Secondary Voltage, e.g., 13.8kV / 0.48kV)
- Vector Group:** (e.g., Dyn11, Yyn0)
- Winding Material:** Copper (Standard) or Aluminum
- Enclosure Rating:** Core & Coil (No Enclosure), NEMA 1 (Indoor), NEMA 2 (Drip-proof), or NEMA 3R (Outdoor Weather-shield)
- Special Requirements:** Forced Air Cooling Fans (AF), Temperature Controller Box, Seismic Bracing, or Specific Dimensions.

3. Standards & Quality Assurance:

Heading: Global Compliance & Reliability

All Apex Electrics VPI Dry-Type Transformers are strictly manufactured and tested according to top-tier international and US standards:

- IEEE C57.12.01 / IEC 60076-11:** Standard requirements for Dry-Type Power Transformers
- DOE 2016:** Compliance with US Department of Energy efficiency standards
- UL / cUL Listed:** Certified for safety in US and Canadian markets
- ISO 9001 & ISO 14001:** Quality and Environmental Management Systems
- Warranty:** 24-Month Standard Warranty with lifetime technical support.



VPI (Vacuum Pressure Impregnation) Processing System



Precision Coil Winding & Assembly Workshop

4. Comprehensive Factory Testing:

Heading: 100% Quality Verification

To ensure maximum reliability and safety, every unit undergoes rigorous testing before dispatch:

- Routine Tests:** Insulation resistance, winding resistance, voltage ratio, and vector group verification.
- Type Tests:** Temperature rise test and lightning impulse test (upon request).
- Special Tests:** Partial discharge (PD) measurement and sound level (noise) verification.
- VPI Insulation Integrity:** Strict dielectric strength checks to guarantee the VPI coating's moisture and dust resistance.

5. Packaging & Global Logistics:

Heading: Export Standard Packaging

We provide professional sea-worthy packaging to ensure your heavy equipment arrives in perfect condition:

- Moisture-Barrier Sealing:** Vacuum-sealed wrapping with desiccants for long-distance sea freight.
- Heavy-Duty Crating:** Reinforced steel-base or solid wooden crates to prevent mechanical damage and vibration during transit.
- Shock Monitoring:** Impact indicators applied to packaging for sensitive shipments.
- Global Shipping:** Extensive experience in shipping to North America, Southeast Asia, Middle East, and Europe.

6. Sustainability & Safety:

Heading: Eco-Friendly Power Solutions

Our VPI Open Ventilated series is designed for a greener, safer future. Unlike oil-immersed units, they pose zero risk of toxic leaks or groundwater contamination. Unlike cast-resin units, the open-coil VPI materials are highly recyclable at the end of their lifecycle. By meeting DOE 2016 efficiency standards, we help clients significantly lower their carbon footprint and operational costs.

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