

Transformers

Oil-Filled Pad-Mounted & Substation Type



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Powering the World Sustainably and Reliably with TECO-Westinghouse's Industrial Solutions



GLOBAL EXPERTISE WITH LOCAL SUPPORT

TWMC's global presence and expertise is supported by the TECO group.



FAST LEAD TIMES, COMPETITIVE PRICING

Competitive pricing and lead times across the US market.



MANUFACTURING FACILITY

Equipped for complete mechanical fabrication, tank assembly, coil winding, and electrical integration.

TECO-Westinghouse is a global leader specializing in the manufacturing and distribution of Industrial Electric Motors, Variable Speed Drives, Transformers, EV Chargers, Busways, and Custom Power Engineered Solutions.

Our legacy of engineering excellence now fuels the next generation of clean-energy solutions. Building on decades of experience in power conversion and control, TECO-Westinghouse continues to expand into renewable and sustainable energy systems.

TECO-Westinghouse has a proven industrial foundation across EV chargers, power distribution hubs, and grid-ready transformer solutions (ranging from 250kVA to 150MVA, up to 161kV class).

TECO-Westinghouse remains focused on a unified mission: delivering intelligent, sustainable power solutions that enable industries and communities to thrive in a cleaner, electrified world.

Three-Phase Oil Filled Distribution & Power Substation Transformers



Product Type Range

- Ratings – 2500KVA – 150,000KVA
- HV 2400V – 161KV
- LV 208Y/120 – 69KV
- Windings – CU-CU or AL-AL (ratings limitations)
- Fluid – mineral oil, natural ester oil/ FR3, synthetic ester oil
- Cooling – Self-cooling, Force-cooling
- Temperature Rise – 65°C, 55/65°C, 65/75°C
- Bushings – Porcelain
- Tap-Changer – Off-load and load tap changer
- Nitrogen blanket
- Conservator tank

Construction

- Bolted/ welded cover
- Lifting lugs, jacking lugs
- Air terminal chamber (ATC) full or half height
- Stainless steel grounding (NEMA pads)
- Skid base
- Provision for anchor bolts
- Rating nameplate, laminate or stainless steel
- Panel/ pancake radiator, welded or with shut-off valve, corrugated radiator, welded on tank
- Drain Valve with sampler
- Upper filling valve
- Vacuum valve
- Provisions Support of LV bushing
- Terminal control box

Connections

- Delta – Wye
- Grounded Wye – Wye
- Delta – Delta
- Wye – Wye
- Wye – Delta

Optional Designs Features

- K-Factor
- Step up design

Accessories

Liquid level gauge (optional contacts), pressure vacuum gauge (optional contacts and bleeder), dial-type thermometer (optional alarm contacts), pressure relief device (optional alarm contacts), winding temperature gauge (optional contacts), sudden pressure relay, Buchholz relay

Finishing Coatings

- ANSI-61 Light gray
- Special color paint as per request

Routine Testing (ANSI C57.90)

- Resistance measurement
- Ratio
- Polarity and phase relation
- No-load loss and excitation current measurement
- Load loss and impedance
- Operation test of all devices
- Winding insulation measurement
- Low frequency test
- Leak test

Special/ Other Testing

- Zero sequence impedance
- Temperature rise test
- Lightning impulse test
- Audible sound level
- Power factor/ tan-delta measurement
- Partial discharge test
- Dissolved gas analysis (DGA)
- Sweep frequency response analysis (SFRA)

Three-Phase Oil Filled Distribution Pad-Mounted Transformers



Accessories

Pressure relief valve, pressure vacuum gauge, liquid temp gauge, liquid level gauge, drain and sample valve, Schrader valve, ground pads/ lugs, nitrogen blanket

Optional Features

- Load break switch with one, two, or three on/off positions, Bay-O-Net fusing or CLFs

Routine Testing (ANSI C57.90)

- Resistance measurement
- Ratio
- Polarity and phase relation
- No-load loss and excitation current measurement
- Load loss and impedance
- Operation test of all devices
- Winding insulation measurement
- Low frequency test
- Leak test

Special/ Other Testing

- Zero sequence impedance
- Temperature rise test
- Lightning impulse test
- Audible sound level
- Power factor/ tan-delta measurement
- Partial discharge test
- Dissolved gas analysis (DGA)
- Sweep frequency response analysis (SFRA)

Product Type Range

- Ratings – 250KVA – 5000KVA
- HV 2400 – 34.5KV
- LV 208Y/120 – 4.16KV
- Windings – CU-CU or AL-AL
- Fluid – mineral oil, natural ester oil/ FR3, synthetic ester oil
- Cooling – Self-cooling
- Temperature Rise – 65°C, 55/65°C, 65/75°C
- Bushings Porcelain – 200/ 600A insert type bushing (dead front)
- Tap-Changer – Off-load
- Nitrogen blanket

Construction

- Welded cover
- Lifting lugs, jacking lugs
- Stainless steel grounding (NEMA pads)
- Parking stands (dead-front pad mounted)
- Provision for anchor bolts
- Rating nameplate, laminate or stainless steel
- Corrugated radiator, welded on tank
- Drain valve with sampler
- Upper filling valve
- Electrostatic shield

Finishing Coatings

- ANSI Munsell 7GY3.29/1.5 bell green
- ANSI-61 Light gray
- Special color paint as per request

Connections

- Delta – Wye
- Grounded Wye – Wye
- Delta – Delta
- Wye – Wye
- Wye – Delta

Optional Designs Features

- K-Factor
- Step up design

Our Capabilities

At TECO-Westinghouse, our capabilities extend far beyond manufacturing as we deliver complete end-to-end power solutions built on decades of engineering expertise. From precision transformer design and fabrication to comprehensive testing and field support, TWMC combines global experience with regional manufacturing strength. Our commitment to quality, innovation, and scalability allows us to serve critical infrastructure customers with reliable products that meet the highest performance and safety standards.

Manufacturing Excellence

TWMC's transformers are manufactured in our ISO-certified Indonesia facility, featuring end-to-end in-house fabrication and assembly under stringent quality controls. Each unit is fully inspected and tested to meet ANSI, IEEE, and IEC standards for safety, reliability, and long-term performance. CSA requirements are also followed.

Engineering and Ratings

Our transformer portfolio includes oil-immersed (ONAN/ONAF) designs, with ratings up to 150MVA and 161kV class. Serving industrial, commercial, and utility applications, each unit is engineered for thermal efficiency, mechanical strength, and reliable performance, with in-house teams collaborating closely with customers to meet exact electrical and environmental requirements.

Utility and Infrastructure Capabilities

Backed by decades of power and energy experience, TWMC delivers turnkey transformer solutions for large-scale utility and infrastructure projects. Through integrated engineering support, field testing, and commissioning, we ensure reliable performance, maximum uptime, and efficient energy delivery across grid, renewable, and industrial applications.

In-Stock Availability

TWMC will maintain in the near future a selection of standard-rated transformers available for quick delivery to meet urgent project needs. Our ready-to-ship inventory includes distribution and power units designed to the same quality and performance standards as our custom builds, ensuring dependable solutions without extended lead times.



5MVA In-Stock Flex Design Unit

Testing & Field Service Capabilities

Testing Capabilities

Comprehensive transformer testing is done in accordance with ANSI C57.12 standards, including electrical, load loss, impedance, and leak tests. Supported by advanced equipment overseas, TWMC ensures accurate performance validation and reliable field support for every unit.

Field Service Capabilities

TWMC provides comprehensive field service support, including preventative maintenance, testing, troubleshooting, and commissioning to maximize equipment reliability and uptime. Our experienced engineers deliver accurate diagnostics and dependable performance across all operating environments.

Preventative Maintenance

- Regular inspections
- Testing services
- Minimize downtime
- Extend lifespan of product

Troubleshooting – Visual/ Electrical

- Fast and effective troubleshooting services
- Visual inspections
- Electrical diagnostics



Comprehensive Commissioning

- Insulation Resistance (IR) testing
- Hi-pot testing
- Transformer Turns Ratio (TTR) testing
- Winding Resistance measurements
- Temperature Detection tests
- Off-Circuit Tap Selector (OCTS) checks
- Baseline Dissolved Gas Analysis (DGA)
- Doble Testing

Standard Testing per ANSI C.57.12.00

Routine Testing per ANSI C.57.12.90

- Resistance measurement
- Ratio
- Polarity and phase relation
- No-load loss and excitation current measurement
- Load loss and impedance
- Operation test of all devices
- Winding insulation measurement
- Low frequency test
- Leak test

CSA requirements are followed.

Design & Standards

Engineered for Optimal Performance in Challenging Conditions

TECO-Westinghouse transformers are designed with advanced engineering techniques, ensuring exceptional performance under demanding conditions. Using sophisticated simulation tools, TWMC achieves industry-leading reliability and durability.

- **High Mechanical Strength**

Engineered for durability, TECO-Westinghouse transformers handle high-load and stress conditions, ensuring reliable, long-term operation.

- **High Short-Circuit Withstand Capability**

Designed to resist sudden surges and electrical faults, providing enhanced protection and reducing risk in high-demand settings.

- **Low Partial Discharge**

Low discharge levels ensure high insulation quality, extending the transformer's lifespan and decreasing maintenance needs.

- **Low Noise Level**

Quiet operation is ideal for installations near sensitive areas, enhancing site suitability for populated or industrial zones.

- **Low Loss**

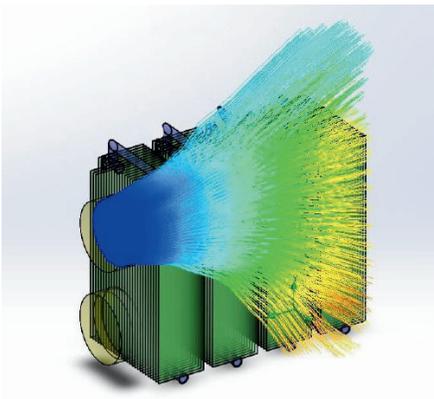
Optimized for minimal energy loss, TECO-Westinghouse transformers reduce operational costs, boosting overall energy efficiency.

- **Low Temperature Rise**

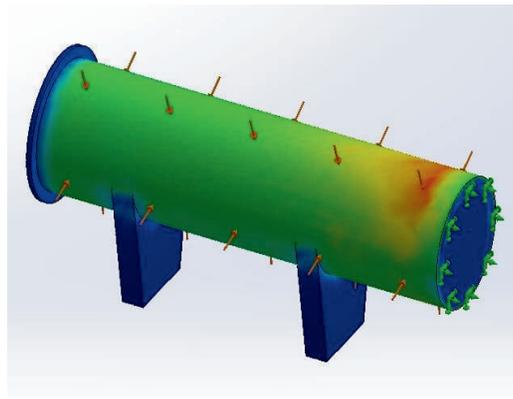
Controls temperature increase under load, enabling safe, continuous operation even in high-temperature environments.

- **No Leakage**

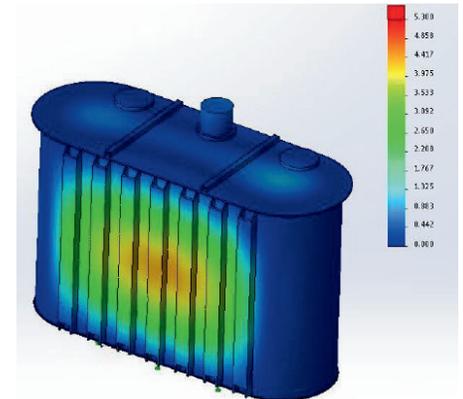
Leak-proof design prevents coolant loss, minimizing environmental impact and maintenance requirements.



Temperature simulation of radiators and fans using Computational Fluid Dynamics (CFD)



Study of von Mises stress using Finite Element Analysis (FEA)



Stress and deformation analysis at vacuum pressure

Advanced Core & Winding Technology

TECO-Westinghouse power transformers use continuously transposed conductors (CTC) in both primary and secondary windings, providing high mechanical strength and superior short-circuit withstand capability. This design enhances durability and reduces the risk of downtime in high-demand applications.

Material Selection for Optimal Performance

Depending on the specific application and customer requirements, the transformer windings can be constructed from either copper or aluminum. Copper is typically chosen for applications demanding higher electrical conductivity and superior thermal performance, while aluminum offers a cost-effective and lightweight alternative without compromising reliability. This material flexibility allows TWMC to optimize transformer designs for efficiency, performance, and budget constraints.

Net-Wrapped CTCs

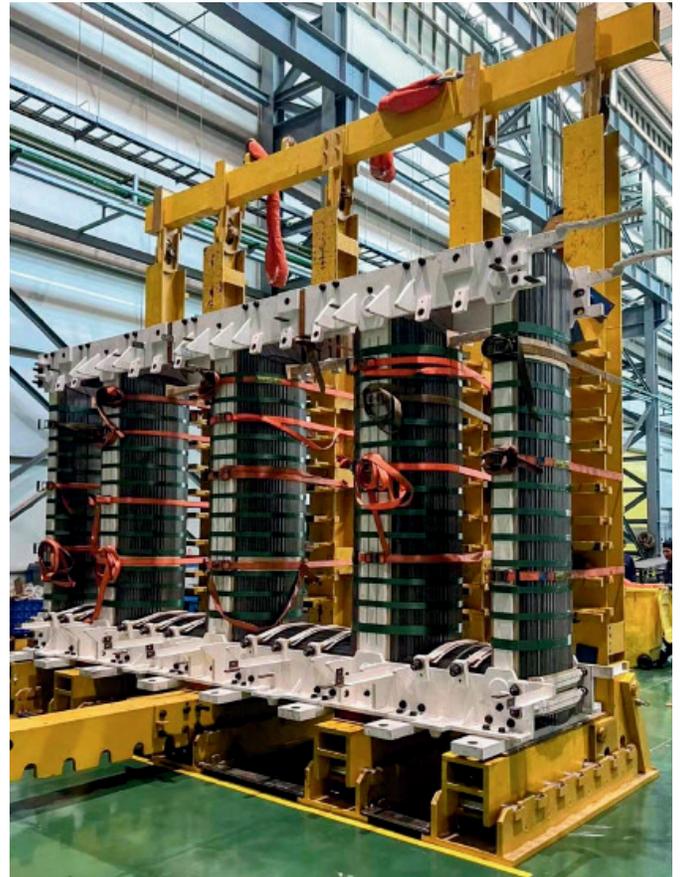
Our transformers utilize net-wrapped CTCs to enhance heat dissipation and enable more compact designs. This improved thermal management extends equipment life, maintains consistent performance under heavy loads, and reduces overall energy and cooling costs.

Grain-Oriented Electric Steel (GOES)

TWMC uses grain-oriented electrical steel (GOES) up to grade 0.75 with step-lap core construction to create a smooth magnetic flux path. This design minimizes iron losses and excitation current, improving energy efficiency and reducing lifetime operating costs.

Exceptional Core Properties

TWMC's precision stacked-core design delivers high mechanical strength and low energy loss under demanding conditions. This results in reliable, high efficiency performance that meets stringent standards while minimizing environmental impact.



Assembly and Drying Process

Meticulous Assembly for Peak Transformer Performance and Longevity

TECO-Westinghouse's assembly process follows stringent standards, incorporating advanced drying and vacuum techniques to maximize insulation quality and operational lifespan.

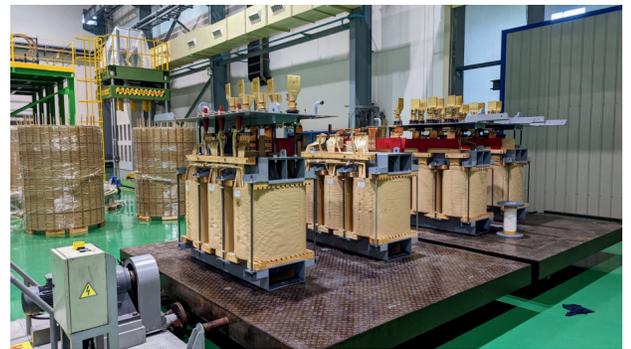
Vacuum Processing: Before oil injection, each transformer tank undergoes vacuuming to remove contaminants and ensure the active parts are optimally protected.

Vapor Phase Drying (VPD): A specialized VPD technology removes moisture from insulation materials, enhancing the transformer's dielectric strength, crucial for worldwide high-humidity regions, including US.

Dust-Free Assembly Environment: Assembly occurs in a temperature and humidity controlled environment, minimizing the risk of contaminants and ensuring product quality.

Low Partial Discharge: Achieves partial discharge levels in the pico-Coulomb range, essential for longevity and reliability in high-demand applications.

Safe and Environmentally-Friendly Practices: TWMC assembly process adheres to strict environmental and safety standards, supporting sustainable and safe operations.



Comprehensive Testing Protocols

State-of-the-Art Testing for Compliance and Reliability

TECO-Westinghouse power transformers undergo thorough testing to meet ANSI and international standards, ensuring durability and efficiency.

Our facilities are equipped to test electrical products up to 150kV, ensuring all transformers are thoroughly tested.

Comprehensive Test Suite

- **High Mechanical Strength:** Ensures durability and resilience in demanding industrial environments.
- **No-Load Loss and No-Load Current Measurement:** Verifies efficiency by assessing energy loss and current under no-load conditions.
- **Lightning Impulse Test:** Confirms the transformer's ability to withstand high-voltage surges.
- **Line Terminal AC Withstand Test:** Tests resilience under AC voltage stress, ensuring operational safety.
- **Induced Voltage Test with Partial Discharge Measurement:** Checks insulation integrity to prevent breakdowns.
- **Temperature Rise Test:** Monitors thermal performance to ensure safe operating temperatures.
- **Functional Test on Control Equipment Accessories:** Verifies the functionality of control systems for reliable operation.
- **Zero Sequence Impedance Measurement:** Ensures proper impedance balance for stable transformer operation.
- **Frequency Response Analysis (SFRA):** Assesses winding alignment and core stability, identifying any potential structural shifts.

These meticulous testing processes guarantee that TECO-Westinghouse transformers deliver outstanding performance, even in the harshest industrial and mining settings, securing them as a trusted solution.

Rated Power	Voltage	Connection	No-Load Loss	No-Load Current	Loaded Loss	Impedance	Noise		Partial Discharge	Temperature Rise	
(kVA)	(kV)		(kW)	(%)	(kW)	(%)			(pC)	(K)	
100000	150/66/10	YN yn0+d	40	0,2	210	12,5	ONAN* ONAF*	≤ 67dB (0.3m) ≤ 71dB (2.0m)	70	Oil Winding Hot Test	≤ 50 ≤ 55 ≤ 68
60000	150/66/10	YN yn0+d	30	0,2	130	12,5	ONAN ONAF	≤ 67dB (0.3m) ≤ 71dB (2.0m)	70	Oil Winding Hot Test	≤ 50 ≤ 55 ≤ 68
60000	150/22/10	YN yn0+d	28	0,2	115	12,5	ONAN ONAF	≤ 67dB (0.3m) ≤ 71dB (2.0m)	70	Oil Winding Hot Test	≤ 50 ≤ 55 ≤ 68
60000 (GIS*)	150/22/10	YN yn0+d	28	0,2	115	12,5	ONAN ONAF	≤ 67dB (0.3m) ≤ 71dB (2.0m)	70	Oil Winding Hot Test	≤ 50 ≤ 55 ≤ 68
30000	150/22/10	YN yn0+d	18	0,2	67	12,5	ONAN ONAF	≤ 67dB (0.3m) ≤ 71dB (2.0m)	70	Oil Winding Hot Test	≤ 50 ≤ 55 ≤ 68
30000	66/22	YN yn0+d	18	0,2	67	12,5	ONAN ONAF	≤ 67dB (0.3m) ≤ 71dB (2.0m)	70	Oil Winding Hot Test	≤ 50 ≤ 55 ≤ 68

* Legend: **GIS** = Gas Insulated

Substation **ONAN** = Oil Natural Air

Natural **ONAF** = Oil Natural Air Forced

TECO Westinghouse

together, we empower the **Future** 

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