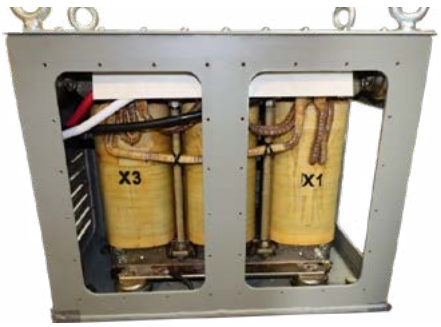
450V TO 120V DD0 PHASE SHIFT MULTIPHASE TRANSFORMERS

HIGH-PERFORMANCE LOW-VOLTAGE POWER TRANSFORMATION FOR INDUSTRIAL AND NAVAL APPLICATIONS

High Efficiency

Reliable

Long-Term Durability



Our 450V to 120V DD0 transformers are custom-engineered to deliver exceptional efficiency, safety, and durability in demanding industrial and marine environments. Through advanced design modeling, rigorous quality control, and extensive testing, these transformers ensure reliable operation, optimized thermal performance, and long service life tailored to your operational requirements.

Key Features & Benefits

- 3-Phase, 450V Delta primary to 120V Delta secondary
- Vacuum Pressure Impregnated (VPI) insulation system for superior dielectric strength and moisture resistance
- Copper windings for enhanced conductivity and thermal stability
- Natural air cooling with optional forced-air fan for extended load handling
- Full primary-to-secondary isolation for safe and reliable performance
- Optional electrostatic shielding to reduce electrical noise coupling

Typical Applications

- Industrial control power systems
- Power distribution systems
- Low-voltage lighting systems
- Naval and shipboard power systems
- UPS and power conditioning systems

PARAMETER	SPECIFICATION
General	
Transformer Type	Dry Type, Vacuum pressure impregnated (VPI)
Service	Small power transformer
Environmental Conditions	
Maximum altitude	3300 ft
Min. ambient non-operating temperature	-30 °C
Max. ambient non-operating temperature	80 °C
Ambient operating temperature range	0–50 °C
Design ambient operating temperature	50 °C
Shock	Grade A, Class II, Type A (MIL-S-901D)
Location	Indoor
Unusual service conditions	Yes
Vibration	Not required
Airborne noise	Not required
Structure-borne noise	Not required
Technical Data	
Electrical System	
Rated voltage (HV)	450 V
Rated voltage (LV)	120 V
Rated frequency	60 Hz
Rated power	45 kVA
Transformer Data	
Dielectric withstand – HV (60 s)	4 kV
Dielectric withstand – LV (60 s)	4 kV
Insulation resistance – HV (500 VDC)	Not required
Insulation resistance – LV (500 VDC)	Not required
Lightning impulse withstand – HV	Not required
Lightning impulse withstand – LV	Not required
Number of phases	3
Vector group	DD0

PARAMETER	SPECIFICATION
Technical Data Continued	
Winding	
Conductor material	Copper
Stabilizing winding required	No
Earthing method	Ungrounded
Insulation class	R
Termination	
HV termination	Cable
LV termination	Cable
Cooling	
Cooling method	AN (Air Natural)
Accessories	
Lifting lugs	Removable hoist rings optional
Design Data	
Electrical Parameters	
No-load loss @ rated tap	130 W
Load loss @ rated tap	581 W
Efficiency @ 50 % load (UPF)	98.88%
Efficiency @ 100 % load (UPF)	98.46%
Impedance (AN, rated tap)	1.95%
Construction	
Conductor material	Copper
HV winding type	Layer wound
LV winding type	Layer wound
Core & winding weight	500 lb
Total transformer weight (with enclosure)	640 lb
Overall width	26 in.
Overall depth	14 in.
Overall height	25 in.
Testing Requirements	
Temperature rise test (80 °C rise)	Yes
Dielectric type tests	Yes
Dielectric special tests	Yes
Capacitance measurement (winding-to-earth & between windings)	Yes

Design, Engineering & Manufacturing Capabilities

- Fully custom-engineered designs for unique load profiles and customer requirements
- Advanced Ansys Maxwell and FEM-based thermal modeling for optimized heat dissipation and extended service life
- Optimized winding layouts for:
  - Reduced eddy current losses
  - Improved efficiency
  - Low acoustic noise and vibration levels
- In-house electrical and mechanical engineering teams to support specialized applications
- Vacuum Pressure Impregnation process to ensure long-term insulation integrity and reliability

Testing & Compliance

- Tested to meet IEEE Standard C57.12.91-2020
- Optional compliance with Grade A shock requirements of MIL-S-901D
- Optional compliance with Type I vibration requirements of MIL-STD-167-1
- Full Factory Acceptance Testing (FAT) available with comprehensive documentation
- Custom test programs available upon request

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Engineered for efficiency, built for reliability, and tested for mission-critical low-voltage power distribution.

GET IN TOUCH

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