**General Information**

ERMCO single phase distribution transformers are designed and manufactured in compliance with all applicable ANSI, and RUS standards. All transformers are oil filled, 65°C rise, and designed for usual service conditions per ANSI C57.12.00.

**Capabilities**

- kVA sizes 5 through 250 kVA
- High voltages 2.4 through 19.9 kV (150 kV BIL)
- Low voltages 120 through 600 volts
- Shell form construction (two core loops and one coil)

**Special design emphasis:**

- Overload
- Fault current
- Extreme transient performance
- Electrical efficiency
- Thermal performance
- Material standardization

**Cores**

- Designed for low watts loss
- High quality grain oriented silicon steel
- Step lap joint construction
- State-of-the-art core forming
- Quality inspection procedure requires 100% loss testing

**Coils**

- Constructed to pass the next higher BIL ANSI impulse test
- Dual voltage coils are rated at highest BIL in both switch positions
- High voltage taps are wound in two sections for optimum magnetic balance
- Wound in a low-high-low configuration in concentric layers

**Coil Insulation:**

- Each layer is insulated with thermally upgraded 65°C rise paper
- Layer insulation is coated with an epoxy adhesive in a diamond pattern for mechanical bonding
- Cooling ducts are rectangular with a flat surface to prevent pressure damage on layer insulation
High Voltage Coils:
• Conductor is magnet wire with a film coating to insulate for turn-to-turn voltage
• Flat wire and hot pressing improve short circuit strength
• Coil ends have extra insulation for protection against secondary induced lightning surges

Low Voltage Coils:
• Interlaced low voltage windings
  • available upon request
• Wound with full width sheet conductor
  • provides maximum short circuit strength
• All low voltage conductors are deburred
  • provides added protection to layer insulation

Clamping Structure
• Rigid steel frames
  • clamps the coil through high density press board shims
• No pressure is applied to the core
  • stress free construction
  • assures low core losses remain stable for the life of the transformer
• The core and coil assembly is securely banded to the top and bottom frames
  • provides excellent short circuit strength

Coil Leads
High Voltage Leads:
• Leads are stranded copper
  • eliminates the possibility of breakage associated with solid wire
• Leads are joined to coil conductor with insulation piercing clamp connector
  • eliminates the need to abrade the film which would weaken the conductor
• Leads are attached to a rigid terminal block before connection to the HV bushing
  • provides increased reliability

Low Voltage Leads:
• Leads are hardened aluminum alloy
  • prevents cold flow at the copper bushing connection
  • extends the full length inside the coil body to the low voltage bushing
  • improves reliability by eliminating a welded joint for a hard alloy tab