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## 262200 - Dry Type Transformers

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## SECTION 26 1200 – DRY TYPE TRANSFORMERS

### PART 1 - GENERAL

- 1.1 Dry-type transformer KVA, Primary Voltage, and Secondary Voltage shall be as listed within the specification or as shown on the drawings and have a UL Class 220 deg. C insulation system, 150 deg. C temperature rise under full load for Single Phase Units 15-250 KVA & Three Phase Units 15-500 KVA. UL Class 180 deg. C insulation system, 115 deg. C temperature rise under full load for Single Phase Units 0.5-10 KVA & Three Phase Units 3-9 KVA. UL Class 105 deg. C insulation system, 55 deg. C temperature rise under full load for Single Phase Units 15-250 KVA. Transformer shall be listed by Underwriters' Laboratories, Inc., and comply with the latest NEMA and ANSI standards. All systems shall be Delta-Y 600 Volts and below unless indicated otherwise by the Owner. All Medium Voltage transformers above 600 Volts shall be Grounded Y unless indicated otherwise by the Owner. All transformers purchased for use at UNH after August 1, 2009, shall meet the DOE 2010 energy code.
- 1.2 Neutral terminal ("Xo") of the transformer shall be grounded to building ground.
- 1.3 Transformer shall have taps on the primary winding with ratings of 2 to 2-1/2% full capacity above normal and 2 to 2-1/2% full capacity below normal. The core assemblies shall be permanently grounded to the enclosure with a flexible conductor of adequate size. The 2-phase wye connected transformer shall be provided with a flexible conductor for grounding the neutral.
- 1.4 The transformer shall be tested and certified not to exceed sound levels established by NEMA standards. The core and coil assembly shall be mounted on isolating pads so as to effectively dampen vibration transmission to the enclosure with no metal-to-metal contact.
- 1.5 The transformer enclosure shall be constructed of heavy-gauge sheet steel. Ventilated openings shall not allow the insertion of any rod of 1/2" diameter into the transformer enclosure. The enclosure shall have removable panels to permit access to transformer terminals. A threaded ground stud shall be provided on the exterior of the enclosure to conform to the requirements of Article 250 of the National Electrical Code. On larger units, lifting lugs shall be provided at top for ease of handling. Each enclosure shall be cleaned, phosphatized, primed and painted with baked enamel.
- 1.6 All connections to transformers shall be made with flexible conduit.
- 1.7 All transformers used on the exterior shall have a weather rated enclosure.
- 1.8 Energy efficiency for all transformers shall meet the minimum requirements of the DOE CSL-3 standards (Candidate Standard Level 3).
- 1.9 The bid price for the CSL-3 dry distribution transformers specified (277/480 to 120/208 V) must be identified (priced) separately within the electrical bid and cannot be included in the bid pricing for other electrical distribution equipment that falls under

Section 16 of the Standard AIA Specification Structure. If specified CSL-3 transformers are not separately identified in the bid pricing then the entire bid will be disqualified.

- 1.10 Harmonic cancelling transformers shall be used for laboratory loads, and other concentrated nonlinear load spaces.
- 1.11 See Chapter 5, Division 01, Section 017700.1.1.B.1.i Closeout Procedures - Project Record Documents for equipment list requirements for all equipment provided in this section.

## PART 2 - PRODUCTS

- 2.1 The following transformers data sheets shall be submitted to UNH Facilities for approval:
  - A. Medium Voltage Transformers above 2400 volts.
  - B. Low Voltage Transformers below 600 volts.

END OF SECTION 26 2200