

SECTION 262200 – DRY TYPE TRANSFORMERS

PART 1 - GENERAL

1.1 GENERAL

- A. THE WORK UNDER THIS SECTION INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

1. Dry Type Transformers

1.2 GENERAL REQUIREMENTS

- A. Voltage for 3 phase units shall be 480V to 120/208V, three phase, four wire unless shown otherwise. Voltage of single phase units shall be 480V to 120/240V single phase, three wire unless shown otherwise.
- B. Where isolation transformer is indicated on drawings, furnish K-13 rated transformer with dual-faraday electrostatic shield.
- C.

PART 2 - PRODUCTS

2.1 INSULATION

- A. Transformers shall be ventilated with insulation to withstand a minimum of 150 degree Celsius temperature rise (Class 220 insulation) unless specifically shown otherwise on the drawings.

2.2 ENERGY EFFICIENCY

- A. Transformers shall comply with the latest applicable DOE energy efficiency requirements and latest edition of NEMA standard TP-1 and shall be labeled for the EPA Energy Star Program.

2.3 SOUND RATING

- A. Sound level shall not exceed a 5db reduction from ST-20 maximum requirements. Sound level in decibels may not exceed the following:

1.	KVA	DESIGN SOUND LEVEL
2.	0-45	40 db
3.	46-150	45 db
4.	151-300	50 db
5.	301-700	57 db

- B. Sound levels shall be determined in accordance with NEMA and ASA Standards. Core and coils shall be mounted on vibration isolator pads.

2.4 ENCLOSURES

- A. Transformers mounted in dry, interior locations shall be furnished with NEMA 1 enclosures unless shown otherwise.
- B. Transformers mounted outdoors or in wet locations shall be furnished with NEMA 3R enclosures with drip shields unless shown otherwise.

- C. Transformers installed inside motor control centers or other similarly enclosed equipment may be “open” units not requiring additional enclosures.

2.5 CLEARANCE REQUIREMENTS

- A. Transformer construction/efficiency/ventilation shall allow 3” (or less) clearance from rear and sides.

2.6 TAPS

- A. All units shall be equipped with a minimum of two (2) 2 ½% taps above nominal (FCAN) and a minimum of four (4) 2 ½% taps below nominal (FCBN) as required to allow adjustment of the turns ratio of the transformer to account for site voltage adjustments.

2.7 MANUFACTURER

- A. Transformers shall be Square 'D', G.E., Siemens or Cutler Hammer.

PART 3 - EXECUTION

3.1 GENERAL

- A. Minimum clearances shall be provided on all sides of transformers per manufacturer's and code requirements.
- B. Where site voltages so require, transformer taps shall be adjusted to maintain nominal voltage on secondary side of transformer. Adjustment of dry-type transformer taps shall not be made until all upstream voltage adjustments (such as voltage tap adjustments at service transformers) are finalized.
- C. Refer to Specification Section 260526 for transformer grounding requirements.
- D. Refer to Specification Section 260553 for transformer identification requirements.

3.2 MOUNTING

- A. Transformers shall be mounted as indicated on plans. No units shall be wall mounted unless shown or directed otherwise.
- B. Floor mounted transformers:
 - 1. Shall be installed on a minimum of four (4) double-deflection neoprene vibration isolators (by Amber/Booth, Korfund Dynamics or Mason Industries - size as required – with seismic restraint capability ratings as required by the associated seismic zone).
 - 2. Shall be installed on four-inch thick concrete pads unless specifically shown otherwise. Pad shall have beveled edges.
- C. Suspended transformers:
 - 1. Shall be trapeze-mounted on unistrut frame supported by a minimum of four steel rods and shall be mounted as high as possible or at height directed (transformers shall not be mounted above lay-in ceilings or in areas with restricted ventilation). Shall be installed using a minimum of four (4) double-deflection neoprene vibration isolators (by Amber/Booth, Korfund Dynamics or Mason Industries - size as required – with seismic restraint capability ratings as required by the associated seismic zone).
 - 2. Contractor shall supply extra supports as may be required due to size and weight.

3. Additional seismic bracing shall be provided for suspended transformers in seismic zones as required to provide a fully code-compliant installation.

END OF SECTION 262200