

SECTION 26 00 00: DRY TYPE TRANSFORMERS

1. GENERAL

- A. For applications requiring isolation transformers, such as for motor variable speed drives, utilize a rated Drive Isolation-type transformer; transformers to be UL listed; indoor-mounted transformers to be FM listed
- B. For applications where large harmonic loads are anticipated, utilize a non-linear load-type transformer
- C. Transformers shall conform to NEMA TP-1 requirements for energy efficiency and be Energy-Star listed.
- D. Transformer windings and terminations shall be aluminum or copper; materials selection to be reviewed at design phase
- E. Transformers shall be capable of operating at 100% of nameplate rating continuously while in an ambient temperature of 40°C (104°F). Maximum temperature rise for transformers shall be 115°C at rated load
- F. Transformer sound levels shall not exceed the levels indicated below:

Transformer KVA	Max. Sound Level (db)
15-50	45
51-150	50
151-300	55
301-500	60

- G. Transformer core and coil assembly shall be grounded to the transformer enclosure by means of a visible, flexible copper grounding strap.
- H. Enclosures for indoor applications shall be NEMA 2 drip-proof rated, with ventilation openings protected against falling dirt. Enclosures for exterior applications shall be rated NEMA 3R minimum.
- I. Use flexible metal conduit to transformer to minimize vibration
- J. Provide concrete housekeeping pad for floor-mounted transformers
- K. Manufacturers
 - 1. Square D
 - 2. Siemens

2. TRANSFORMERS: GENERAL PURPOSE TYPE

- A. Transformer insulation type shall be as follows:
 - 1. Less than 15 KVA: 185 degrees C insulation system
 - 2. 15 KVA and above: 220 degrees C insulation system
- B. Taps:
 - 1. 3 through 12 KVA: two 5% taps below rated primary voltage
 - 2. 15 KVA and above: six 2.5% taps, 2 above and 4 below rated primary voltage

3. TRANSFORMERS: DRIVE INSULATION TYPE

- A. Transformer windings shall be specially braced to withstand the thermal and mechanical stresses of DC drive current spikes
- B. Transformer windings shall incorporate an isolated and shielded secondary winding to provide greater isolation of drive “noise” coupling back to the primary windings
- C. Isolation transformer insulation type shall be as follows:
 - 1. 7.5 KVA and above: 220 degrees C insulation system
- D. Taps:
 - 1. Six 2.5% taps, 2 above and 4 below rated primary voltage

4. TRANSFORMERS: NON-LINEAR LOAD TYPE

- A. K-factor shall be specified as required for the project. In general, K ratings of 4 or 13 shall be specified
- B. Transformer windings shall incorporate a 200% rated neutral winding and double-capacity neutral terminations
- C. Non-Linear Load transformer insulation type shall be as follows:
 - 1. 15 KVA and above: 220° C insulation system
- D. Taps
 - 1. Six 2.5% taps, 2 above and 4 below rated primary voltage