

GENERAL:

The scope of this document is to provide requirements for Low Voltage Transformers including (but not limited to) transformers for general applications, transformers rated for non-linear loads, shielded transformers, and drive isolation transformers.

DESIGN GUIDELINES:

1. Low voltage transformers shall be UL listed and meet applicable NEMA standards. Transformers should be two winding dry type design with 115 degree centigrade temperature rise and 220 centigrade class core and coil insulation. Transformer kVA ratings shall be based on self cooled (AA) capacity without the use of any fans.
2. Low voltage transformers with receptacle loads or loads with harmonic content shall be K rated with a minimum rating of K-4.
3. Load calculations shall be provided and be based on the following:
 - 3.1. Receptacles located in offices, classrooms, laboratories, or research facilities shall be considered to have 80 percent of their load be harmonic producing devices (such as computers, laser printers, and copy machines).
4. Low voltage transformers for isolation of adjustable speed drives (variable frequency or other designs) shall be specifically designed for that use.
5. Three phase low voltage transformers should have delta connected primary and wye connected secondary windings. Three phase transformers should have six (6) full capacity taps in 2-1/2 percent increments.
6. All conductor connections shall be oxide inhibited.

NOT PERMITTED:

Transformers with fan cooling with integral shunt trip high temperature protection shall not be used, and should be specifically excluded in project specifications.