

Drive Isolation Transformer

For Non-Linear Loads

Section 1- General

1.1 Drive Isolation Transformer for Non-Linear Loads

The drive isolation transformer (DT-series) is designed to distribute electrically isolated power to non-linear loads or to a combination of linear and non-linear loads. It is for use with loads that draw harmonic currents from the power source in a 3-phase, 4-wire electrical system. DT Series transformers provide circuit impedance which helps to reduce the harmonic current distortion drawn by its load(s).

- 1.1.1 The transformer shall provide circuit impedance to reduce harmonics currents.
- 1.1.2 The transformer shall provide electrical isolation between its primary and secondary windings.
- 1.1.3 The transformer shall be suitable for connection at an electrical distribution panel, supplying one or more loads.

1.2 Electrical Ratings:

- 1.2.1 Primary Voltage: [208, 240, 380, 415, 480, 600, other].
- 1.2.2 Secondary Voltage: [208Y/120, 380Y/220, 400Y/230, 415Y/240, 480Y/277, 600Y/346].
- 1.2.3 System Frequency: [50 hertz, 60 hertz, 50/60hertz, other]
- 1.2.4 Power Rating: [7.5, 11, 14, 20, 27, 34, 40, 51, 63, 75, 93, 118, 145, 175, 220, 275, 330, 440, 550, other] KVA

Section 2 – Basic Product Requirements

2.1 The drive isolation transformer shall meet the following basic requirements:

- 2.1.1 The standard transformer shall be suitable for loads having a K-factor of up to 4.
- 2.1.2 The impedance to harmonic currents shall typically be three percent (3%).
- 2.1.3 Fundamental frequency impedance shall be less than 0.5%.
- 2.1.4 The transformer shall be a standard catalog item for the manufacturer.
- 2.1.5 Product warranty period shall be 10 years pro-rated with typical limited liability clauses.

2.2 Construction:

- 2.2.1 Three-phase, common core & coil assembly
- 2.2.2 Free convection cooled, no fans required.
- 2.2.3 Windings shall be aluminum, but with copper terminations.
- 2.2.4 Terminations shall be copper and must be welded to the winding conductor.
- 2.2.5 Insulation system shall be UL class H (220C).
- 2.2.6 Maximum ambient temperature shall be 40C.
- 2.2.7 Temperature rise shall be 150C [80C, 115C, other]
- 2.2.8 Construction shall be [open core & coil, Nema 1, Nema 3R, other].
- 2.2.9 Efficiency shall be 96% minimum at full load at 25C ambient temperature.
- 2.2.10 Construction shall be in accordance with UL, CSA and ANSI requirements.
- 2.2.11 Audible noise shall not exceed 45dBA at full load when properly mounted in a suitable floor standing enclosure.
- 2.2.12 Enclosure color shall be [ASA-61 grey, other].

2.3 Options:

- 2.3.1 Solid copper windings with copper terminations.

- 2.3.2 Thermal switches [N.O., N.C.] installed in [center coil only, all coils].
- 2.3.3 Vibration mounting pads for enclosed transformers.
- 2.3.4 Enclosure style and color.
- 2.3.5 K-Factor ratings [9, 13, 20, other].

Section 3 - Acceptable Manufacturer

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- 3.1 The approved and acceptable Drive Isolation Transformer is the DT – Series as manufactured by Controlled Magnetics Inc.**

Controlled Magnetics, Inc.

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