

ACME GENERAL PURPOSE DISTRIBUTION TRANSFORMERS



General Purpose Distribution Transformers

A transformer is an electrical apparatus designed to convert alternating current from one voltage to another. It can be designed to “step up” or “step down” voltages and works on the magnetic induction principle. A transformer has no moving parts and is a completely static solid-state device, which ensures, under normal operating conditions, a long and trouble-free life. It consists, in its simplest form, of two or more coils of insulated wire wound on a laminated steel core. When voltage is introduced to one coil, called the primary, it magnetizes the iron core. A voltage is then induced in the other coil, called the secondary or output coil. The change of voltage (or voltage ratio) between the primary and secondary depends on the turn’s ratio of the two coils.

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What are typical applications for transformers?

- Distribute power at high voltage.
- Eliminate double wiring.
- Operate 120-volt equipment from power circuits.
- Insulate circuits/establish separately derived circuits.
- Provide 3-wire secondary circuits.
- Buck and Boost.
- Provide electrostatic shielding for transient noise protection.

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Can transformers be operated at voltages other than nameplate voltages?

In some cases, transformers can be operated at voltages below the nameplate rated voltage. In NO case should a transformer be operated at a voltage more than its nameplate rating unless taps are provided for this purpose. When operating below the rated voltage, the kVA capacity is reduced

correspondingly. For example, if a 480-volt primary transformer with a 240-volt secondary is operated at 240 volts, the secondary voltage is reduced to 120 volts. If the transformer was originally rated 10 kVA, the reduced rating would be 5 kVA, or in direct proportion to the applied voltage.

Can Single Phase Transformers be used for Three Phase applications?

Yes. Three phase transformers are sometimes not readily available whereas single phase transformers can be found in stock. Three single phase transformers can be used in delta connected primary and wye or delta connected secondary. They should never be connected wye primary to wye secondary since this will result in

unstable secondary voltage. The equivalent three phase capacity when properly connected of three single phase transformers is three times the nameplate rating of each single-phase transformer. For example: Three 10 kVA single phase transformers will accommodate a 30 kVA three phase load.

General Purpose Transformers



Buck-Boost Transformers



Drive Isolation Transformers



Buck Boost Transformers



With nearly two-thirds of all electrical loads being AC motor loads, maintenance of the proper voltage to that motor is very important. If the supply line voltage is not maintained, motor winding current is increased causing reduced motor torque and escalating motor temperature, all of which results in the rapid loss of insulation life expectancy.

Anytime you have a lower than standard voltage, equipment damage and failure can result. Buck-boost transformers are an economical way to correct this potentially very serious problem. Anytime a line voltage changes in the 5-20% range is required, a buck-boost transformer should be considered as your first line of defense.

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The Acme Drive Isolation Transformers are specifically designed to handle the mechanical stresses, voltage distortions, and harmonics associated with AC and DC variable speed drives. Acme's Drive Isolation Transformers maximize the power quality benefits gained from standard isolation transformers by:

- Preventing overheating due to harmonics
- Limiting harmonic peaks
- Increasing the ground fault tolerance of connected variable frequency drives
- Minimizing the transfer of inverter switching noise

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Drive Isolation Transformers



For more info about Acme Electric General Purpose Distribution Transformers call 1-800-STEINER (783-4637) to speak with a Steiner electrical application specialist.

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