

BUCK-BOOST TRANSFORMERS

Single and Three Phase Applications – 60Hz

A Buck-Boost Transformer is used to provide an economical method of correcting a lower or higher voltage to a voltage rating more suitable for efficient operation of electrical equipment.

Buck-Boost Transformers are small Kva, single phase, 600 volt class insulating transformers with dual primary and dual secondary windings. If wired as an isolation transformer, they can be utilized to provide for applications requiring 12, 16, 24, 32 or 48 Vac up through 7.5Kva. However, they are usually connected as autotransformers by utilizing one unit for single phase applications and either two or three units banked for three phase operation. They are primarily used for motor operation and should not be used for motor control circuits, to correct fluctuating line voltage or to obtain a neutral on a delta system. These applications require transformers especially designed for these specific applications.

NOTE: When installation is to be made on a grounded system, consideration must be given to the resulting voltage. Thus, on a 208 grounded wye/120 system the voltage can be boosted to 240 volts but the voltage to ground will be 139 volts. If 240/120 volts with a midpoint ground is needed, a standard two-winding transformer must be used.

The following formula can be used to calculate specific requirements.

For Single Phase

$$\text{LOAD KVA} = \frac{\text{Load Voltage} \times \text{Full Load Amps}}{1000}$$

For Three Phase

$$\text{LOAD KVA} = \frac{\text{Load Voltage} \times \text{Full Load Amps} \times 1.732}{1000}$$

For quick selection data, refer to the tables on the following pages.