



## AIR CONDITIONING, REFRIGERATION & APPLIANCE TRANSFORMERS

**An economical approach to changing world voltages to 115V for operation of air conditioners, refrigeration equipment, appliances, business machines, and related equipment.**

Construction Features ..... 110-111

Selection Instructions ..... 111

Selection Charts..... 112

## Air Conditioning, Refrigeration & Appliance Transformers

The transformers in this section are autotransformers designed to change a wide range of voltages to the standard motor voltages for domestic appliances, air conditioners, and related equipment.

Correcting high or low supply voltage conditions to match the voltage requirements of appliances and equipment aids in safe, efficient operation.

These Acme autotransformers change or correct off-standard voltage that may be the result of:

1. Line supply voltage not matching the appliance motor nameplate voltage, (e.g., supply voltage is 380Y/220V, three phase, four wire. Appliance motor operates on 110 V, single phase. See schematic).
2. Low voltage due to inadequate wiring capacity in the electrical distribution system.
3. Low voltage caused by distribution of power over a long distance.
4. High or low voltages supplied by the utility company.

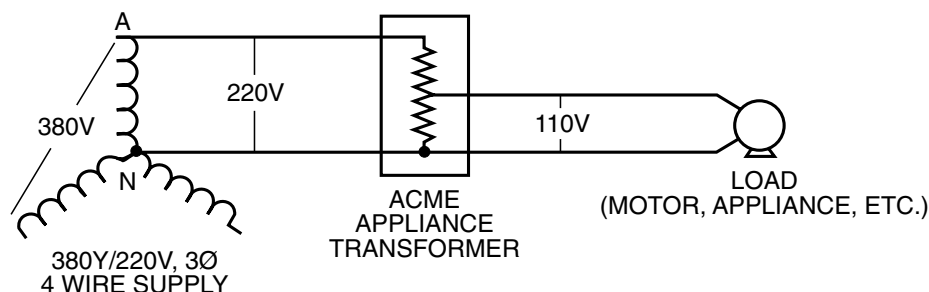
Standard voltages and frequencies (Hz) vary throughout many countries of the world. Since these autotransformers

are suitable for 50/60 Hz (cycle) service, they are applicable in export trade where it is necessary to change to a standard voltage for appliance operation.

These transformers are capable of adjusting voltage only; they can't change the frequency of a supply circuit. However, in most instances, 60 Hz (cycle) equipment can be operated from a 50 Hz supply if the voltage is reduced approximately 8-10%. For example, 115 V, 60 Hz equipment can usually be operated on 50 Hz at 105 V.

Some common uses for Acme Air Conditioning, Refrigeration and Appliance transformers include adjustment of off-standard voltage to the nominal voltages required to operate:

- a) Air conditioners, television receivers, all home appliances.
- b) Hermetically sealed refrigeration motors.
- c) Individual machine lighting, tool post grinders, fans, convenience outlets for portable lights, power tools.
- d) Magnetic contactors, relays, AC motors and similar devices requiring large starting (inrush) currents.



## Construction Features

Acme appliance transformers are autotransformers. The input (primary) winding is in electrical series connection with the output (secondary) winding; the input and output are not electrically isolated.

The autotransformer principle is the most economical for appliance applications, since only the difference between input voltage and output voltage is transformed. This results in smaller size, reduced weight and lower cost.

All units are constructed of core lamination processed from annealed electrical grade silicon steel. This improves transformer efficiency by keeping heat losses at a minimum.

Coils are precision machine wound and hand finished. The core and coil combination is impregnated with electrical grade varnish, then heat cured. This provides cool operation and protects the transformer from moisture and contamination. The result is long transformer life.

The transformers in this section will not cause harmonic distortion to voltage or current wave shape.

All transformers in Group C are equipped with a SAFETY grounding feature on both the input and output side.

Connection for ground may be made through lead wires or through plug and receptacle combinations where installed.

All units are manufactured and tested in accordance with National Electrical Manufacturers Association standards.

Some groups are equipped with primary voltage taps which correct for voltage conditions constantly above or below the nominal rating of the supply.

## Selection Steps

1. Determine the value of incoming line supply voltage and frequency (50 or 60 Hz).
2. Find the appliance or load equipment voltage rating and amperes from the nameplate or instruction sheet. Multiply the two to obtain VA requirement of the load. If the power requirements are listed only in watts, consider this the same as VA. (Exception: electric discharge lighting such as mercury vapor, fluorescent, etc. should always be sized by volts x amps (VA). If only wattage ratings are known, double this requirement to obtain VA ratings of transformers needed).
3. Add all VA requirements of equipment to obtain total load. (All components must be of same voltage rating).
4. Add 10% for high starting current and overloading to obtain VA size of transformers.
5. Select transformer from charts on following pages using combination of supply voltage (primary), voltage rating of equipment (secondary), load VA rating, and type of connections desired.



## GROUP C

PRIMARY VOLTS — 200/220/240

SECONDARY VOLTS — 115, 50/60 Hz



RECEPTACLE

CATALOG NO.	VA RATING	OUTPUT AMPS	APPROX. DIMENSIONS INCHES (CM.)			APPROX. SHIP WEIGHT LBS. (KG.)	CONNECTIONS FEET (METERS)
			HEIGHT	WIDTH	DEPTH		
T160830 ①	200	1.74	9.16 (23.3)	3.89 (9.9)	3.67 (9.3)	6 (2.7)	6 (1.8) primary cord and secondary receptacle
T160831 ①	300	2.61	9.16 (23.3)	3.89 (9.9)	3.67 (9.3)	6 (2.7)	6 (1.8) primary cord and secondary receptacle
T160832 ①	400	3.48	9.16 (23.3)	3.89 (9.9)	3.67 (9.3)	8 (3.6)	6 (1.8) primary cord and secondary receptacle
T160833 ①	500	4.35	9.68 (24.6)	4.75 (12.1)	4.51 (11.5)	10 (4.5)	6 (1.8) primary cord and secondary receptacle
T160834 ①	1000	8.70	9.68 (24.6)	4.75 (12.1)	4.51 (11.5)	14 (6.4)	6 (1.8) primary cord and secondary receptacle
T160835 ①	2000	17.40	11.50 (29.2)	7.81 (19.8)	7.13 (18.1)	27 (12.2)	6 (1.8) primary cord and secondary receptacle

① All models can be reverse connected with input voltage applied to secondary terminals and output voltage available at primary terminals. Do not exceed rating voltages. Transformer VA capacity will remain the same.