

# Installation, Operation and Maintenance of Acme Constant Voltage Regulator

## BASIC FUNCTIONS

Your new Acme Constant Voltage Regulator is designed for special applications where "clean" power is vital to the performance of equipment. It will maintain output voltage within  $\pm 3\%$  of rated voltage while the input voltage fluctuates from  $-20\%$  to  $+10\%$  of nominal. Additionally, Acme Constant Voltage Regulators (abbreviated CVR's) attenuate troublesome transient line spikes which disrupt sensitive equipment. Acme CVR's are warranted for one year\*. Proper installation and application will insure a long, trouble free service life. Some recommendations follow.

\*Re: General Catalog for details.

## INSPECTION

Acme CVR's are individually inspected, tested, and packaged for shipment at the factory. The unit should be unpacked as soon as it is received and examined for possible damage during shipment. Should damage be found, a claim should be filed immediately with the transportation company.

## OPERATING TEMPERATURE AND VENTILATION

Since all constant voltage regulators operate with portions of the core in saturation, the temperature of the core laminations may be about  $100^{\circ}\text{C}$ . Many constant voltage regulators use exposed laminations which may be casually touched by personnel. Acme CVR's are totally enclosed as a safeguard against contact with uncomfortable temperatures. On larger Acme CVR's, natural heat transfer from the core may result in necessary for your CVR to regulate properly.

Installing the CVR in a well ventilated area at normal room temperature will help assure its long service life. Confined areas restrict the natural convection cooling of the unit.

## SOUND LEVEL

Voltage stabilizers and regulators are more audible than conventional distribution transformers because the core must operate in magnetic saturation to provide proper voltage regulation. This saturation causes vibrations in the core and surrounding components. To mitigate these vibrations, non-ferrous components have been designed into the Acme constant voltage regulator. Even with these special features, it may be more audible than a conventional distribution transformer of the same KVA size. A change in load will often noticeably change the sound level of the unit. This is normal for CVR's.

Proper installation will maximize the benefits of the sound suppressing design features of your Acme CVR. Some helpful tips include:

1. Mount the CVR on a heavy, solid surface to prevent structural transmission of vibrations. Thin surfaces such as plywood walls or curtain walls amplify sound.
2. Avoid a corner location since the audible sound will be reflected out into the room.
3. Locating the unit in a remote area or adjacent room may be considered for especially sound-sensitive applications.

## INSTALLATION

Mount Acme Electric's CVR indoors, away from moisture. It is very important that it be installed where the air is clean and away from areas where excess quantities of dust, corrosive fumes, heat or other adverse atmospheric conditions exist. The CVR is cooled by

natural air convection. Space should be allowed around the device for free air flow. Restriction of the air flow may cause overheating and burnout.

All Acme CVR's should be installed according to national and local electrical codes. Overcurrent protection for the input side of the Acme CVR should be sized in accordance with Article 450-3, (b) (1) of the National Electrical Code utilizing the "maximum input amps" on the nameplate. All CVR cases should be grounded.

Acme CVR's come in three Styles. Mounting instructions and conduit locations for each style are summarized in Table I.

Style I and Style II CVR's contain rubber vibration isolators. They are installed between the internal core and coil and the external mounting plate or mounting bars. The bolts through the vibration isolators and mounting means are intentionally left loose. This may give the impression that the mounting provisions are poorly secured to the unit. This is normal, however, and the bolts should not be tightened.

## LIFTING PROVISIONS

Style I and Style II have two lifting means.

- A. When wall mounting is desired, use the larger holes provided in the wall hangers. The small holes in the hangers are bolt holes for permanent mounting.
- B. When floor mounting is desired, remove the top portion of the enclosure. This can be done by removing the screws on the sides. This will expose the structure bracket of the core and coil. Each bracket is provided with a lifting hole.

Style III has an integral skid for use with a fork lift.

## CONNECTIONS

Each Acme Electric CVR is equipped with an electrical connection diagram. Make connections only shown on diagram. Do not attempt to make any other connections. This may result in failure of the unit safety hazards.

Input and output wiring is to be sized in accordance with the National Electrical Code. Do not attempt to reverse feed this CVR, that is connect incoming power to the output terminals.

Many units are equipped with tap leads to increase their versatility. It is very important to insulate and isolate tap leads not used for a particular connection. An uninsulated live lead could be a safety hazard or could cause equipment damage.

## MAINTENANCE

Practically no maintenance is required on an Acme CVR. It should be inspected one to three months after initial installation to determine how much dirt and dust can be removed by the use of vacuum cleaners or waterfree compressed air (below 25 pounds per square inch). After the first few inspections, a regular inspection schedule can be set up depending on the atmospheric conditions.



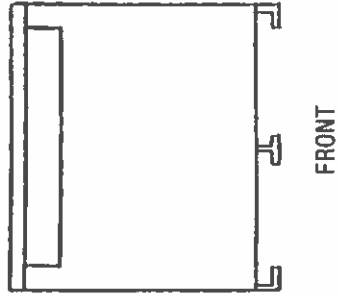
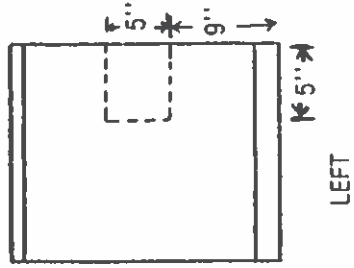
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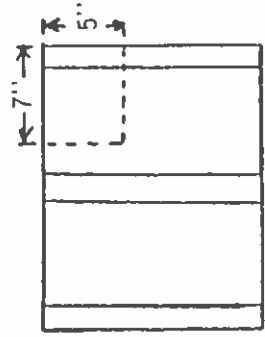
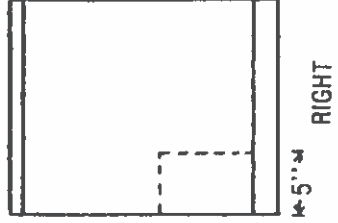
Acme Electric Corporation

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**WALL MOUNTING FOR STYLE III:  
USE TRIANGULAR BRACKET PL-70725.  
MOUNT TO WALL WITH A MINIMUM OF  
SIX BOLTS HAVING AT LEAST 1/2"  
DIAMETER.**

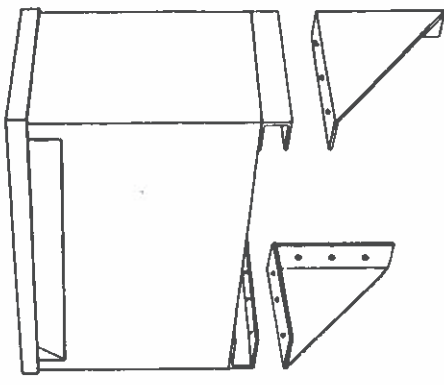


10"



STYLE III:  
FREESTANDING  
FLOOR MODEL

KNOCKOUT AREAS  
5" DOWN BY  
DOTTED LINES.



NOTE: To provide a safety factor, walls for wall mounted units should be able to support four times the weight of the unit.