

# Instructions for Dri-Var Fixed Bank Capacitor Equipment



IL 39-211-9

## SAFETY NOTICE

- Keep these instructions available to those responsible for proper installation, maintenance, and operation of the product.
- These instructions are a guide to the safe use of DRI-VAR capacitor banks. They do not supplant or take the place of any applicable national and/or local codes, or requirements of insurance underwriters.
- Follow your company's safety procedures.
- Apparatus covered by this instruction literature should be operated and serviced only by competent personnel familiar with good safety practice. These instructions are written for such personnel and are not intended as a substitute for proper training and experience in safety procedures for this type of equipment.
- Read these instructions carefully before attempting to install, operate, or maintain this device. Failure to follow these instructions could cause severe personal injury, death, or property damage.
- The capacitor has discharge resistors to decrease residual voltage from rated voltage to 50 volts or less in one minute. Before handling equipment or removing the equipment cover, wait one minute after disconnecting from service. Then short and ground the capacitor using an insulated tool. Shorting should be between all capacitor terminals and ground.

## DESCRIPTION

Westinghouse DRI-VAR Capacitor equipments are designed for indoor applications. They are used for power factor and voltage improvement.

The DRI-VAR capacitor equipment utilizes capacitors designed with a metallized film dielectric which is self protecting against most short circuits. The equipment is provided with a removable cover for convenient installation. Optional fuse kits for field installation are available upon request.

## RECEIVING, HANDLING

When unpacked, carefully inspect the unit for damage and check the nameplate to be sure the desired rating has been received. File a claim immediately with the carrier for any damages sustained in transit, and notify the nearest Westinghouse Sales Office.

## INSTALLATION

### Mounting

DRI-VAR capacitor banks have rigid steel channels at the base of the unit for easy mounting. Equipment may be mounted on the floor wall or ceiling.

*All possible contingencies which may arise during installation, operation, or maintenance, and all details and variations of this equipment do not purport to be covered by these instructions. If further information is desired by purchaser regarding his particular installation, operation or maintenance of his equipment, the local Westinghouse Electric Corporation representative should be contacted.*

---

## WARNING

CAPACITORS, FUSED OR UNFUSED, MAY RUPTURE UPON FAILURE. THIS POSSIBILITY MUST BE CONSIDERED WHEN CHOOSING A LOCATION FOR THE CAPACITORS. EXPLOSION IS ALSO A POSSIBILITY WHEN HI-POT TESTS ARE PERFORMED ON A CAPACITOR, AND PERSONNEL SHOULD BE PROTECTED DURING THESE TESTS.

---

### Cable Sizes and Switching Equipment

Capacitors may operate with a maximum of 135% rated kVAR in accordance with NEMA Standards. This permits operation up to 110% rated voltage plus a safe allowance for usual harmonic effects. Applications with excessive harmonics should be referred to Westinghouse for application guidance.

Fuses, cable size and switching equipment should be selected with at least a 35% margin over the nominal current value, given by:

Three phase units:

$$I \text{ (amps)} = \frac{\text{kVAR} \times 1000}{\text{Volts} \times 1.73}$$

Single phase units:

$$I \text{ (amps)} = \frac{\text{kVAR} \times 1000}{\text{Volts}}$$

Switches and circuit breakers used for capacitor switching must be rated for capacitor switching duty.

### Connections

Connections are made directly to the power circuit through a suitable switch or circuit breaker. Appropriate openings need to be made in the enclosure, conduit installed, and cables drawn into the terminal compartment and connected to the fixed bus of the equipment. Two typical installations are shown at the top of page 3.

Power factor connection capacitors should not be applied indiscriminately to motors. If the capacitor rating is significantly larger than the no load kVAR of the motor, then damaging overvoltages or transient torques could occur. (See National Electric Code, Section 460-7).

### MAINTENANCE

---

**CAUTION: BEFORE INSPECTING OR WORKING ON CAPACITORS, POWER MUST BE REMOVED BY A VISIBLE DISCONNECT.**

---

A capacitor is normally maintenance-free, requiring only periodic inspection. Equipment should be checked periodically for failed capacitors. This check can be made (after de-energizing and following "Safety Instructions, Shock Hazard" in the first part of these instructions) by (1) checking for fuse operation indication; (2) measuring capacitance, and/or (3) feeling the capacitor case (a capacitor which has been operating will be warmer than the ambient temperature). Any capacitor showing mechanical damage to its case may result in an electrical failure and should be replaced.

### DISPOSAL

Incineration or other disposal should be in accordance with Federal, State, and Local Regulations.

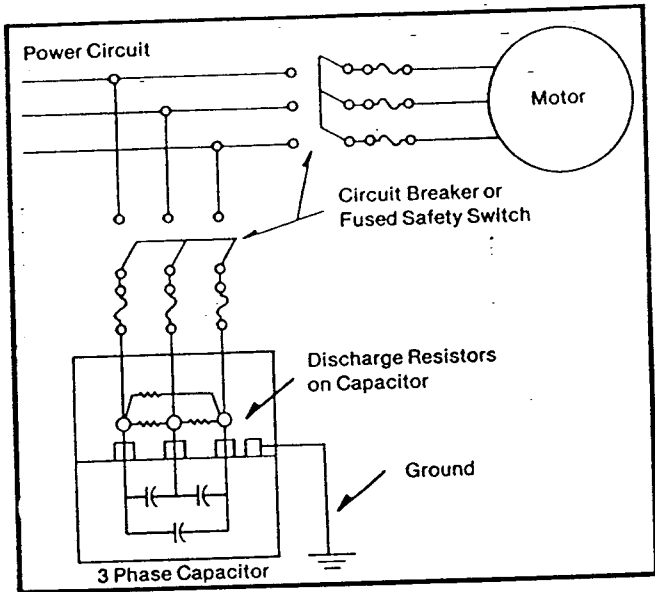


Diagram of Capacitor Equipment Connected on the Line Side of a Motor with Separate Switch.

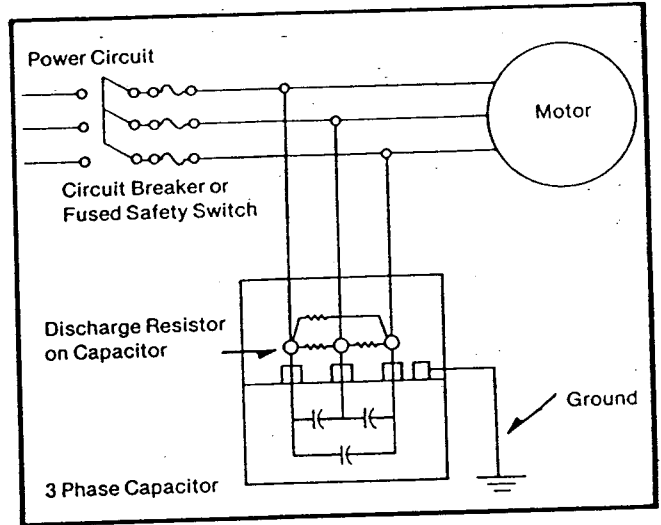


Diagram of Capacitor Equipment Connected on the Load Side of a Motor Switch and Using the Motor Switch for Connection. Reduce rating of over-current device to compensate for reduced line current.

