



INSTRUCTIONS

GEI-44220B

SUPERSEDES GEI-44220A

A-C UNDERVOLTAGE RELAY

Type RAV11B

POWER SYSTEMS MANAGEMENT DEPARTMENT

GENERAL  ELECTRIC

PHILADELPHIA, PA.

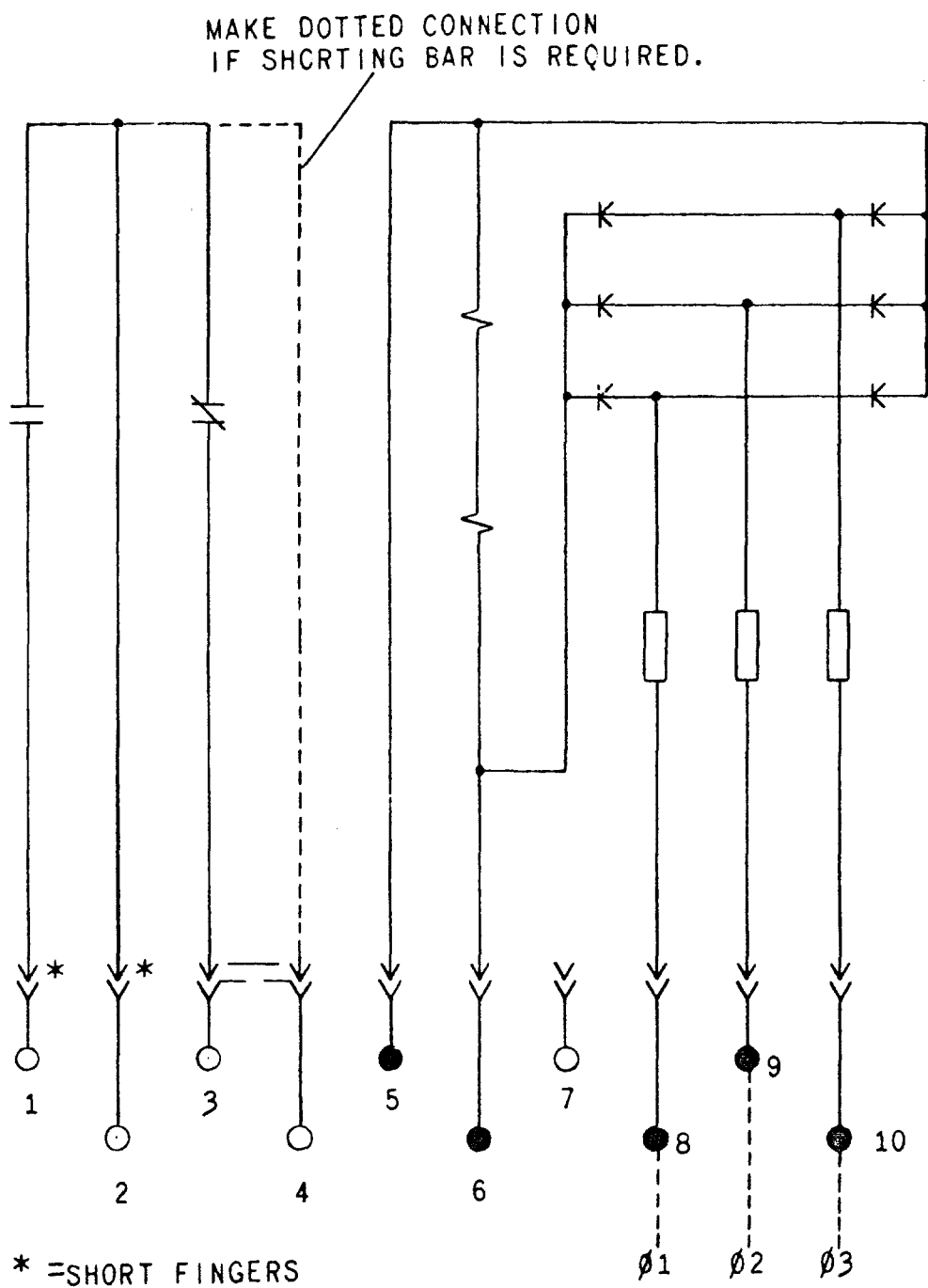


Fig. 1 Internal Connection Diagram For RAV11B Relay (Front View)

A-C UNDERVOLTAGE RELAY TYPE RAV11B

INTRODUCTION

These instructions supplement instruction book GEI-7499 which is included in this book. The combination of the two, form instructions for the Type RAV11B relay.

This relay is designed for use as a three phase a-c undervoltage relay having an adjustable dropout of 15 to 30 percent of rating and frequency compensated from 20 to 60 cycles.

APPLICATION

A primary application is its use as a residual voltage relay on automatic throwover schemes where induction motors are the principle load. Premature transfers can cause transient reaccelerating currents high enough to damage motor windings. These high currents also affect instantaneous overcurrent relay settings and introduce

* problems in relay co-ordination. The RAV relay is frequency compensated and therefore does not change calibration as the frequency of the residual voltage decreases with the speed of the induction motors.

RATINGS AND BURDEN

The relay is rated 120 volts, 3 phase, 60 cycles with a burden of 3.5 watts per phase at unity power factor.

DESCRIPTION

The relay construction is similar to the Type RAV11A relay described in the included instruction book except for the addition of a three phase full wave rectifier. This rectifier consists of six diffused junction rectifier units type 1N93. The series resistors (1000 ohm) in each phase reduce the loading on the rectifiers and minimize temperature errors.

INSTALLATION

The outline and panel drilling diagram is shown in Fig. 1 of the included book. Internal connection diagram is shown in Fig. 1 of this supplement.

ADJUSTMENTS AND TESTS

* Electrical tests require a variable 3 phase source. The normal factory settings are made to close contacts 1-2 when the applied 3-phase voltage is 65 percent of rating or less. The contacts 2-3 are made to reclose when the voltage has dropped to 20 percent of the a-c rating. Additional dropout points of 15 and 30 percent of rating are determined and the position for the calibrating arm marked on the calibrating plate. If factory adjustments have been disturbed requiring relay adjustments other than the position of the calibrating arm refer to ADJUSTMENT section of included instruction book.

The d-c voltage output, across terminals 5-6 with positive on terminal 6, should be approximately 7.5 volts d-c at rated a-c volts applied. Before

making an adjustment the position of the calibrating spring should be in the middle holes of the calibrating arm and moving contact. Start the calibration test with the right stationary contact moved to its extreme right position.

Pickup of the relay is defined as the applied voltage at which the 1-2 contacts just close. Dropout is defined as the voltage at which contacts 2-3 reclose. The contacts 2-3 do not close at the same voltage the contacts 1-2 open on decreasing voltage and it is possible for the armature to assume a position, depending on the applied voltage, where neither pair of contacts is made. The difference in dropout can be as much as 15 percent and depends on the contact gaps, the normal being approximately 1/8 inch.

The a-c voltage across each resistor is normally 55 volts and the a-c voltage across each rectifier unit is 5 volts.

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the General Electric Company.

To the extent required the products described herein meet applicable ANSI, IEEE and NEMA standards; but no such assurance is given with respect to local codes and ordinances because they vary greatly.