INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE RB BALANCING RELAY

CAUTION Before putting protective relays into service, remove all blocking which may have been inserted for the purpose of securing the parts during shipment, make sure that all moving parts operate freely, inspect the contacts to see that they are clean and close properly, and operate the relay to check the settings and electrical connections.

CONSTRUCTION AND OPERATION

The Type RB Relay consists of two coils operating on plungers suspended from a balanced arm which carries a contact on either side of the bearing. Both contacts are open when the arm is horizontal. The coils are ordinarily supplied with voltage windings, and in order to obtain an exact electrical balance between the two coils with equal voltage impressed on them, a resistor mounted between the coils is connected in series with the stronger one and the resistance is adjusted until a balance is obtained. The contact arm is mechanically balanced by means of balance nuts carried on the studs at the ends of the arm. The percent of unbalance at which the contacts will close can be varied by changing the contact gaps or the tension of two coil springs which are attached to the ends of the contact arm, or both. The contact gap has more effect on the setting than the spring tension. The upper ends of these springs are attached to slotted brackets which are shifted in position on the relay base to vary the spring tension. The normal range of unbalance at which the contacts can be adjusted to close is 5% to 15%. The normal contact gap is 1/32" for a 5% unbalance setting. An unbalance tends to close the contact directly above the coil on which the higher voltage is impressed.

INSTALLATION

The relays should be mounted on switchboard panels or their equivalent in a location free from dirt, moisture, excessive vibration and heat. Mount the relay with the back vertical and the top of the case horizontal. This is important in order to minimize friction. The arm on which the contacts are mounted should move freely in its bearings and should be in mechanical balance.

Any of the four mounting screws may be utilized for grounding the metal base. The electrical connections may be made direct to the terminal studs furnished with the relay.

The internal connections of the Type RB relay are shown in Figure 1. The outline and drilling dimensions for mounting the relay on panels of slate or other insulating material are given in Figure 3, while the drilling dimensions for mounting on steel panels are given in Figure 2.

ADJUSTMENTS AND MAINTENANCE

The proper adjustments to insure correct operation of this relay have been made at the factory and should not be disturbed after receipt by the customer. If the adjustments have been changed or the relay taken apart for repairs, the following instructions should be followed in reassembling and setting it.

If it should be necessary to remove the balance arm, it should be replaced very carefully in its bearings, which should be adjusted to have a barely perceptible amount of end play. The position of the balance weights should be adjusted if necessary to obtain mechanical balance. The stop screws on the moving arm should be set to permit 1/64" to 1/32" contact deflection beyond the point where the contacts just close at 15% unbalance.

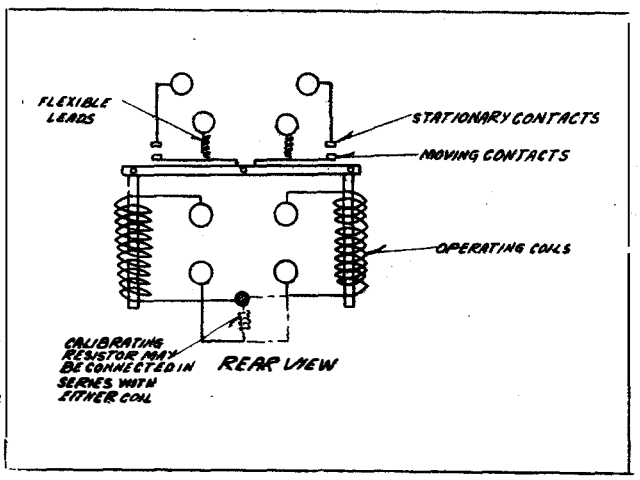

Fig. 1—Internal Wiring Diagram of the Type RB Relay.

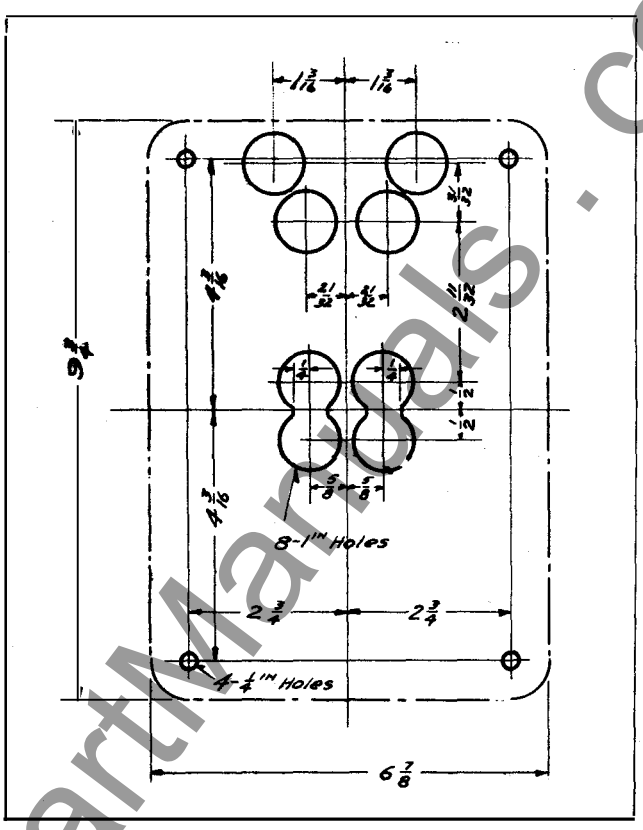

Fig. 2—Drilling Plan for Mounting the Type RB Relay on a Steel Panel.

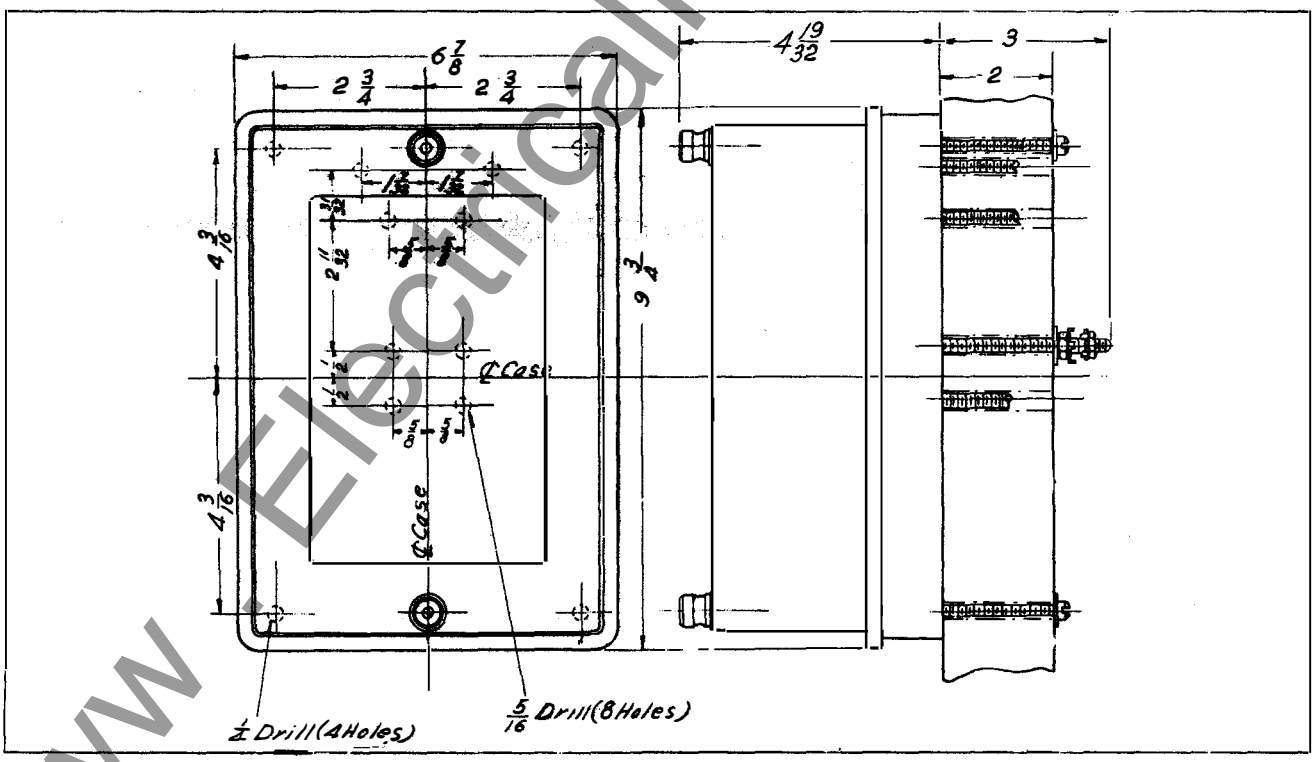

Fig. 3—Outline and Drilling Plan for Mounting the Type RB Relay on Panels of Slate, Ebony Asbestos or Other Insulating Material. For Reference Only.

All contacts should be periodically cleaned with a fine file. S#1002110 file is recommended for this purpose. The use of abrasive material for cleaning contacts is not recommended, because of the danger of embedding small particles in the face of the soft silver and thus impairing the contact.

RENEWAL PARTS

Repair work can be done most satisfactorily at the factory. However, interchangeable parts can be furnished to the customers who are equipped for doing repair work. When ordering parts, always give the complete nameplate data.

WESTINGHOUSE ELECTRIC CORPORATION
METER DIVISION • **NEWARK, N.J.**
Printed in U.S.A.