

MOTOR APPARATUS TYPE PR PLUGGING RELAYS

Class RP 24330

INSTRUCTIONS AND RENEWAL PARTS DATA

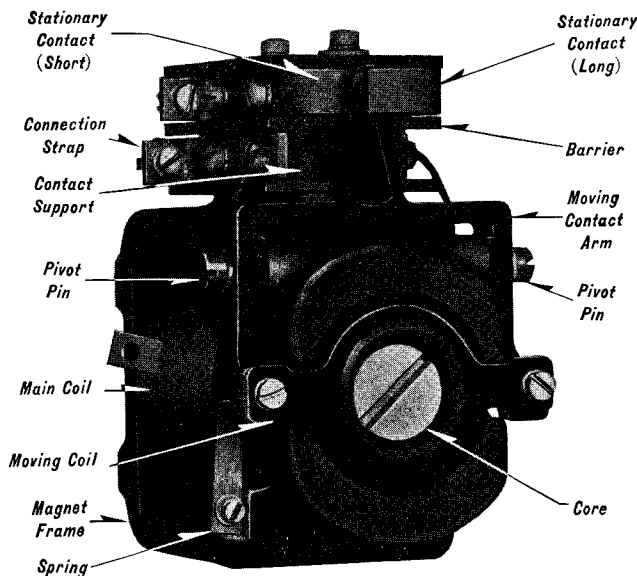


FIG. 1—TYPE PR PLUGGING RELAY

INSTRUCTIONS

General Information

The type "PR" or polarized relay makes one of two contacts depending on the direction of excitation applied to the stationary and moving coils.

Normally, the main or stationary coil is allowed to "Soak" across the line and the direction of excitation of the moving coil is changed. Its chief application lies in controlling the contactor which shorts the first or plugging step of resistance in a d-c. plugging reversing controller.

Construction

As shown in the illustrations, the essential parts of the relay are the two coils, iron yoke, core and contacts. The arrangement of barriers, method of bringing out leads, location of floating coil, construction of supporting spool of floating coil and its small travel, all insure mechanical protection. It employs the idea of unit construction, so that there are no accurate alignments to be made in the field.

Application

This relay has been designed to make a circuit not to break one. Therefore, in all applications, any circuits which are to be broken must be taken care of with larger relays. The operating range is approximately 10 or 15 volts to 250 volts.

The function of this relay is to protect the motor during plugging by preventing the first accelerating or plugging contactor from closing too soon. This relay consists of a fixed coil and a moving coil and their magnetic circuits. The fixed coil is permanently connected across the line in parallel with the low voltage contactor and furnishes an unidirectional field in which the moving coil acts. The moving coil is connected across the armature. Hence, for one direction of motor armature rotation the moving coil is repelled, while for opposite rotation it is attracted. During the plugging operation, the moving coil retains its original polarity until armature rotation has almost ceased. Then the polarity of the moving coil is reversed, thereby energizing the plugging contactor. When starting from

rest, the IR drop across the armature will cause the moving coil to be energized, thus allowing the first accelerating contactor to close.

Maintenance

The small movement of the floating coil insures almost infinite mechanical life for the bearings and contacts. Should the main coil burn out or ground, it may be removed by taking a large screw driver and unscrewing the core, then sliding the coil out of the side of the relay.

If the small coil becomes defective, it may be replaced by disconnecting its leads and two supporting screws. In neither case need any other part of the apparatus be dismantled to change coils.

After replacing either coil, should the direction of motion of the moving contact be reversed, remove the coil and turn it around 180° to change its polarity.

There are no adjustments to be made, except taking care that there is no friction in the bearings and that the moving contact is about central when no voltage is applied to the moving coil.

*To be filed as an Instruction Leaflet and as Renewal Parts Data; for Renewal Parts see reverse side of this sheet.

MOTOR APPARATUS
TYPE PR PLUGGING RELAYS

RENEWAL PARTS

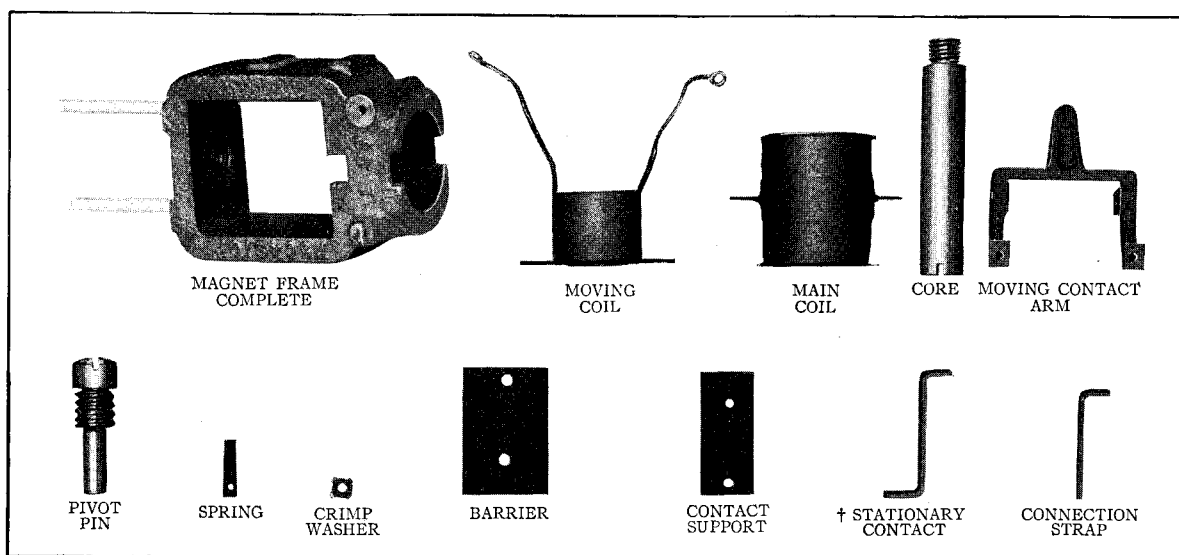


FIG. 2—RENEWAL PARTS FOR TYPE PR PLUGGING RELAY

When ordering, specify whether long or short stationary contact is desired.

Recommended Stock of Renewal Parts

Name of Part	No. Req. Per Relay	For Relays in use up to and including		
		2	5	15
Moving contact arm.....	1	0	1	1
Pivot pin.....	2	0	2	4
Spring.....	1	1	1	2
Stationary contact, long.....	1	1	2	4
Stationary contact, short.....	1	1	2	4
Contact support.....	2	0	1	1
Barrier.....	3	0	1	3
Main Coil.....	1	0	0	1
Moving Coil.....	1	0	0	1

Ordering Instructions

Quick shipments from sales office stock and prompt replies to inquiries, without the necessity of referring to the works for information, are possible only when complete identifying information for the part is given. Careful observance

of the following points on inquiries or orders are essential for correct shipments and prompt service:

1. Name the part, using the name shown on the illustration above, and state quantity desired.
2. Specify the number that is stamped on the magnet frame. When ordering coils, also give the number shown on the old coil.
3. State whether shipment is to be made by freight, express (and name the route) or by parcel post. If by parcel post, shall we insure the shipment?
4. Send all orders or correspondence to the nearest sales office of the company.
5. Small orders should be combined so as to amount to a value of at least one dollar, as shipping expenses prevent us from billing a smaller amount.

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY

East Pittsburgh Works

Printed in U.S.A.

East Pittsburgh, Pa.

*To be filed as an Instruction Leaflet and as Renewal Parts Data; for Instructions see reverse side of this sheet.