

INSTRUCTIONS

POWER DIRECTIONAL RELAY  
TYPE GGP51A

IN  
DRAWOUT CASE

*Switchgear*

GENERAL  ELECTRIC  
SCHENECTADY, N.Y.

## POWER DIRECTIONAL RELAY

### TYPE GGP51A

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.

This relay consists of one induction-cup unit and one induction-disk unit mounted in a single case. The induction-cup unit is similar to the unit used in a Type CAP15A relay, differing only in that it has four adjustable resistors to give maximum torque at unity power factor. The induction-disk unit is like the unit used in a Type IAV54B longtime undervoltage relay.

The internal connections are such that the operation of the undervoltage unit is controlled by the opening of the normally closed contacts of the direction unit (right hand, front view). Thus the undervoltage unit is made to act as a timer. The time curve is shown in Fig. 4.

On generators where reverse power protection is provided by GGP relays, it is necessary to synchronize in the "FAST" direction or to adjust the governor promptly to make the generator take load within the time setting of the relay if unnecessary tripping of the relay is to be avoided.

Maximum torque is obtained at unity power factor in the directional unit with connections as shown in Fig. 3.

The outline and panel drilling are shown in Fig. 1 and the internal connections are shown in Fig. 2.

The instructions GEI-12083 for the Type CAP15A and GEH-1266 for the Type IAV54A, which are included in this instruction book, apply to this relay in all other respects.

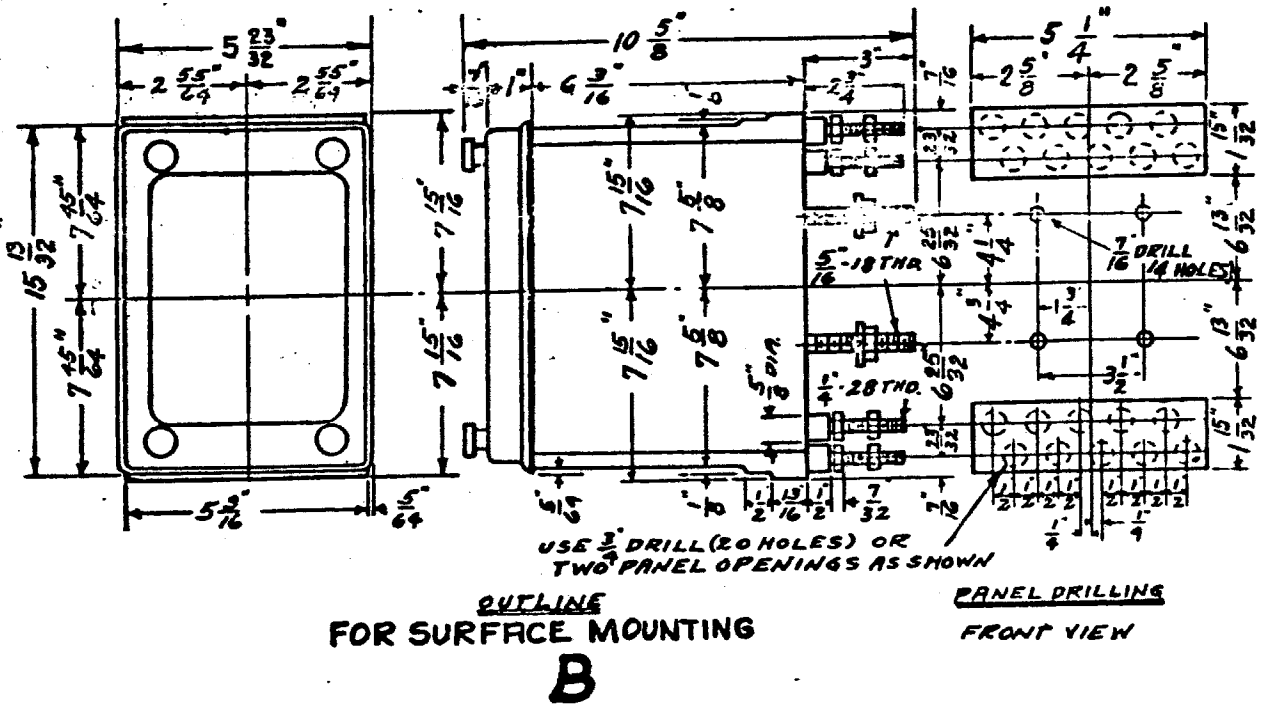
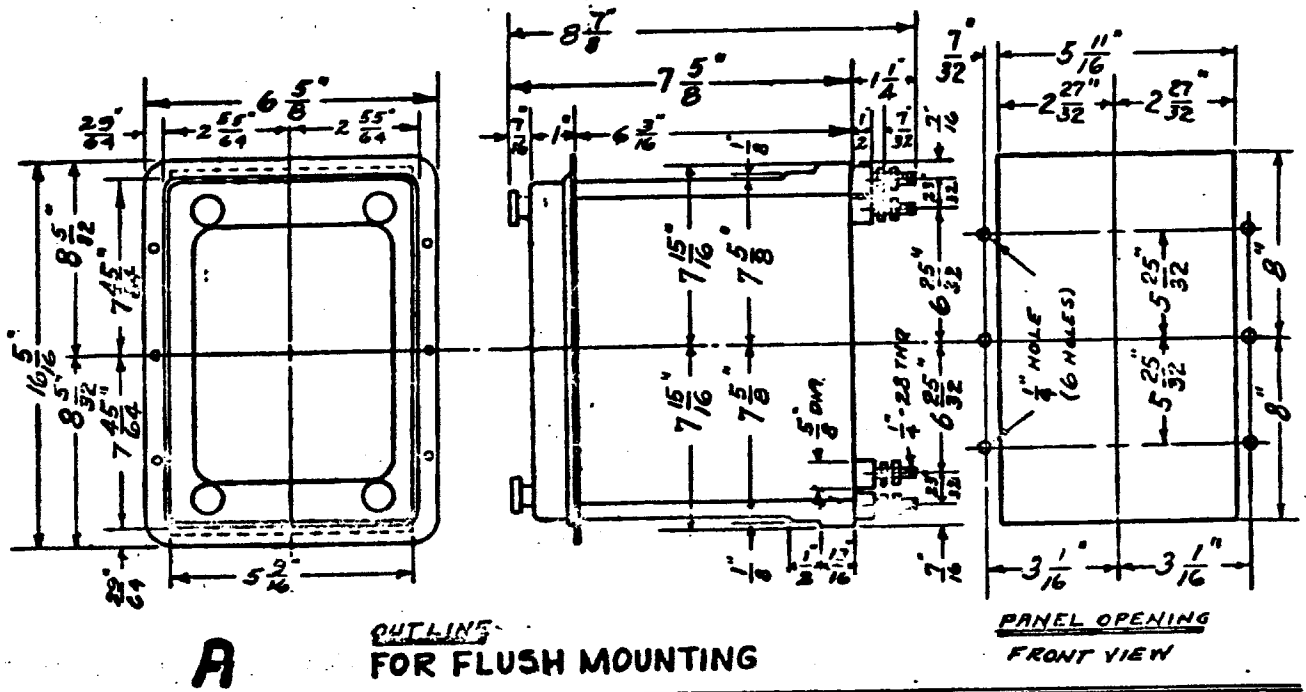


FIG. 1  
 OUTLINE AND PANEL DRILLING FOR DRAWOUT CASE. TWO-UNIT DOUBLE-END.

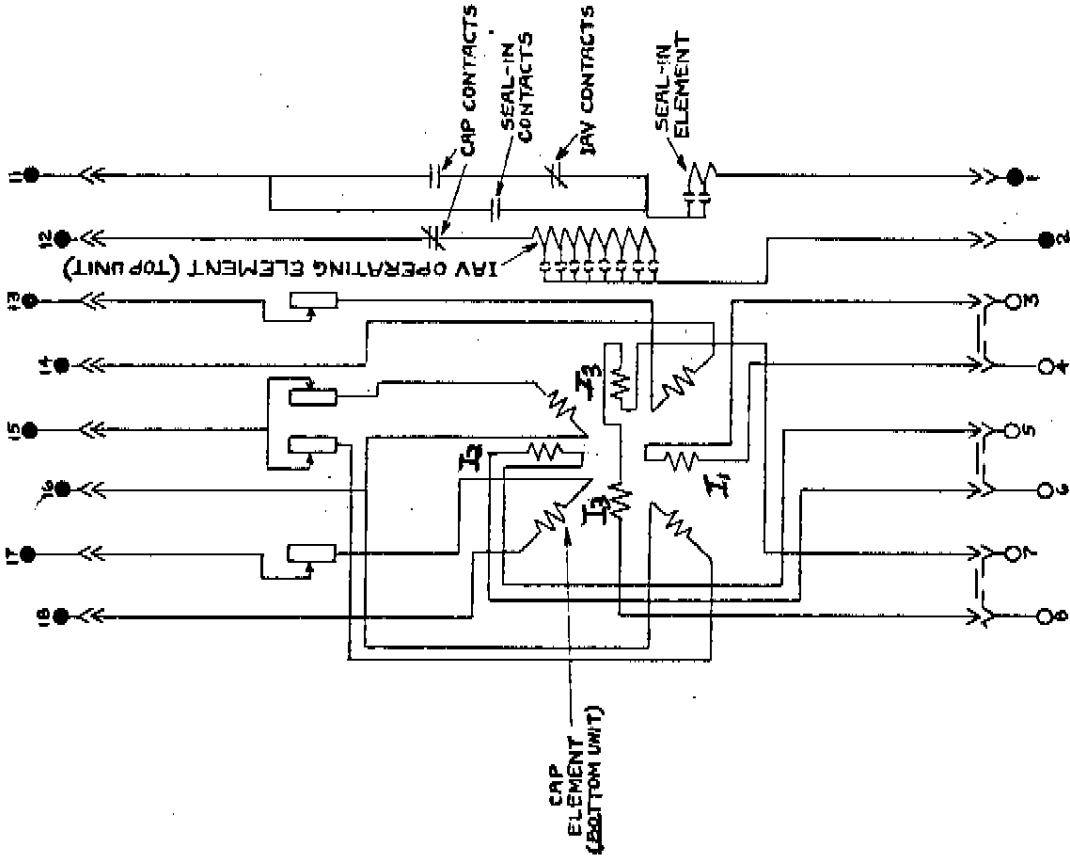


FIG. 2 INTERNAL CONNECTIONS FOR THE TYPE GGP51A RELAY IN THE DRAWOUT CASE.

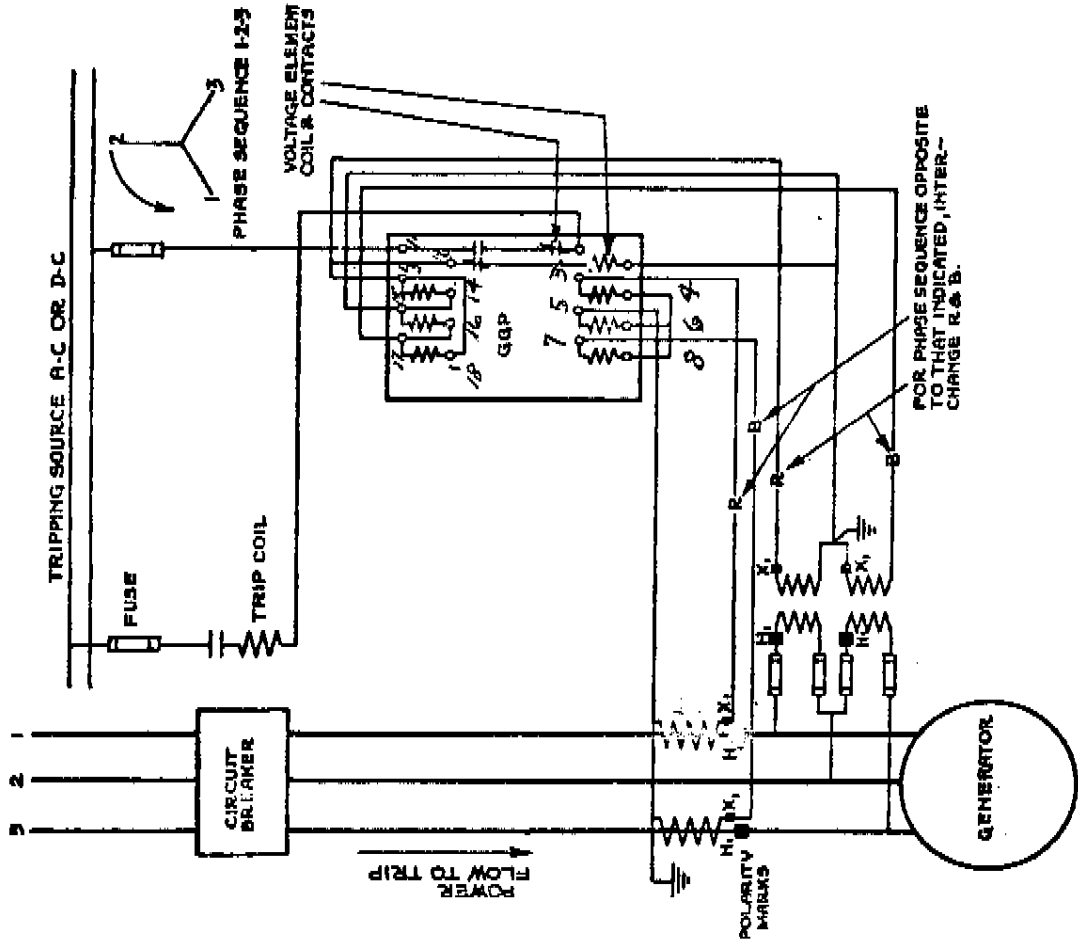
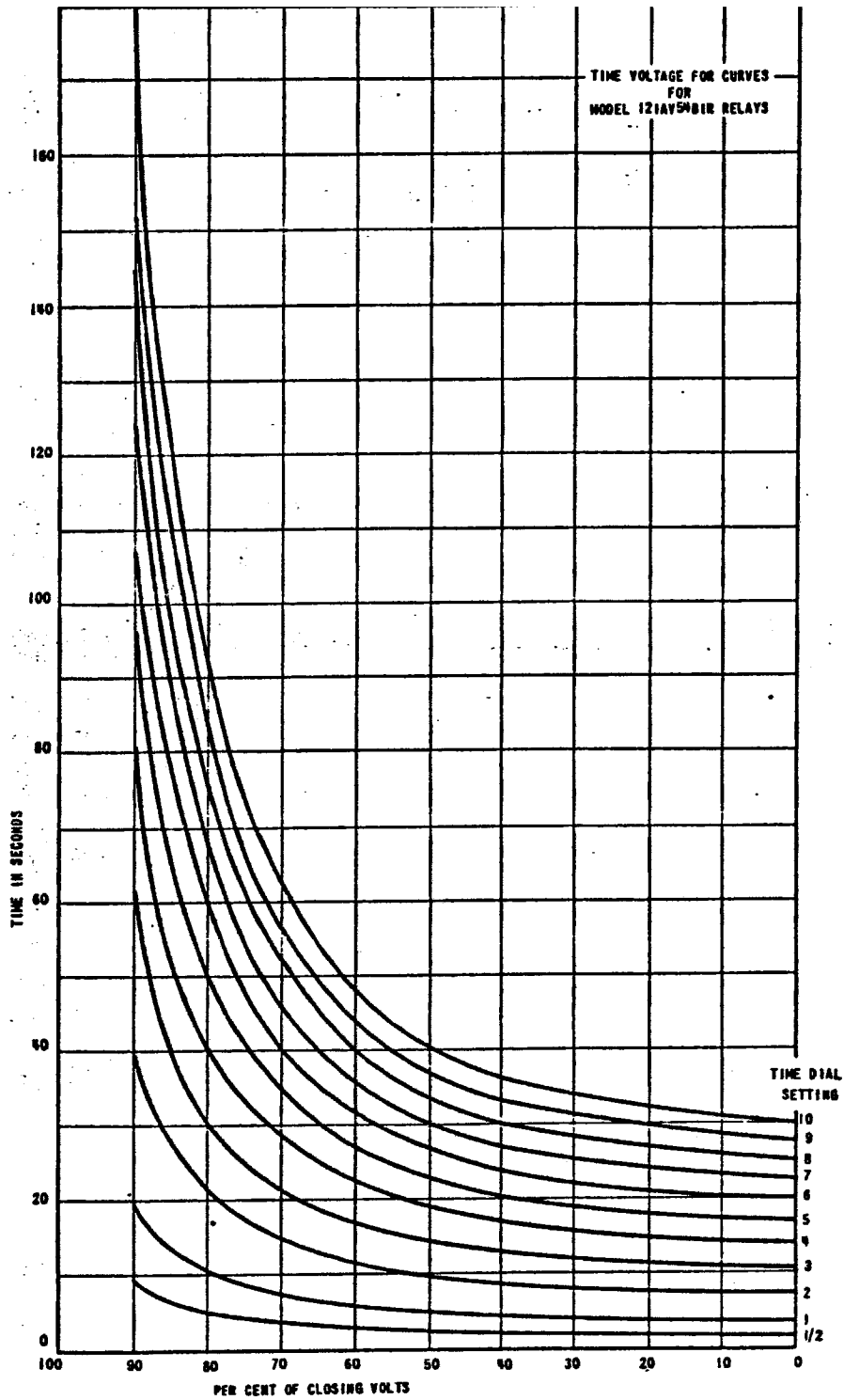


FIG. 3 EXTERNAL CONNECTIONS OF THE TYPE GGP51A RELAY IN THE DRAWOUT CASE FOR PROTECTION OF A GENERATOR AGAINST MOTORING.



**FIG. 4**  
**TYPICAL TIME-CURRENT CHARACTERISTIC OF THE TYPE GGP RELAY.**



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