INSTRUCTIONS

GEK- 28049A
Insert Booklet GEI-98345

H.B. Section - #7262

GROUND DIRECTIONAL OVERCURRENT RELAY

TYPES

JBCG51K( )Y1A
JBCG53K( )Y1A

POWER SYSTEMS MANAGEMENT DEPARTMENT

GENERAL ELECTRIC

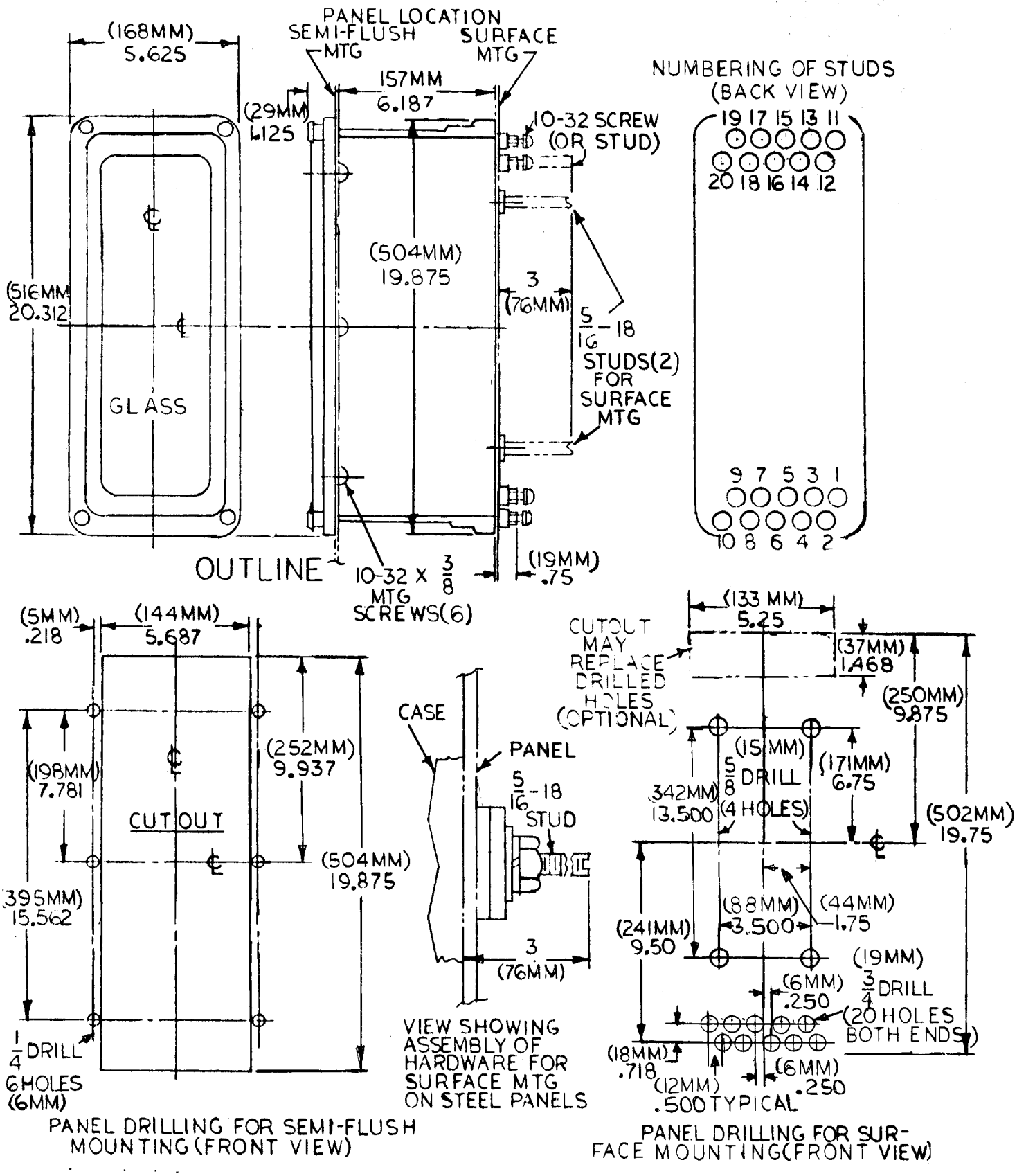

FIG. 1 (K-6209276-2) Outline And Panel Drilling Dimensions

GROUND DIRECTIONAL OVERCURRENT RELAYS

TYPES JBCG51K(-)Y1A AND JBCG53K(-)Y1A

INTRODUCTION

This instruction book includes a copy of GEI-98345 which describes the basic Ground Directional Overcurrent Relays, Type JBCG. These instructions are supplemented by the description below of the instantaneous unit, thus forming instructions for relays with these elements. The addition of the instantaneous unit constitutes a special relay of the same model type as the standard with the addition of "Y1A" in the model nomenclature.

INSTANTANEOUS ELEMENT

DESCRIPTION

The instantaneous unit is a small instantaneous hinge-type unit which is mounted on the right front side of the induction unit. Its contacts are normally connected in parallel with the contacts of the main unit. Its coil is connected in series with the operating coil of the main unit.

When the current reaches a predetermined value, the instantaneous unit operates, closing the contact circuit and raising its target into view. The target latches in the exposed position until released by pressing the button beneath the lower left corner of the relay cover.

The instantaneous unit operates over a 4 to 1 range and has its calibration stamped on a scale mounted beside the adjustable pole piece. Time-current characteristics are shown in Figure 3.

RATINGS

The instantaneous unit is designed to use any one of five coils having pickup ranges of 1 to 4, 2 to 8, 4 to 16, 10 to 40 and 20 to 80 amperes respectively. The current closing rating of the contacts is 30 amperes for voltages not exceeding 250 volts. The instantaneous unit coil will carry 1.5X minimum setting or 10 amperes (whichever is smaller) continuously.

Burden data on the instantaneous unit coils are given in the following table:

BURDEN TABLE

COIL	FREQ.	I (AMP)	VA	Z OHMS	PF
1-4	60	5	82.3	3.23	0.95
	50	5	80.0	3.20	0.95
	25	5	65.1	2.74	0.98
2-8	60	5	20.6	0.81	0.95
	50	5	20.0	0.80	0.95
	25	5	16.3	0.69	0.98
4-16	60	5	5.0	0.20	0.95
	50	5	5.0	0.20	0.95
	25	5	4.4	0.17	0.98
10-40	60	5	0.83	0.033	0.95
	50	5	0.80	0.032	0.95
	25	5	0.65	0.027	0.98
20-80	60	5	0.21	0.008	0.95
	50	5	0.20	0.008	0.95
	25	5	0.15	0.007	0.98

INSTALLATION

MOUNTING

The outline and panel drilling dimensions are shown in Fig. 1.

CONNECTIONS

Internal connections are shown in Fig. 2.

ADJUSTMENTS (NON DIRECTIONAL INSTANTANEOUS UNIT)

Select the current above which it is desired to have the instantaneous unit operate and set the adjustable pole piece so that the top of the hexagon head is even with the desired calibration on the scale. To raise or lower the pole piece, loosen the locknut and turn it up or down and then tighten in position.

The contacts should be adjusted to make at about the same time and to have approximately 1/8 inch wipe. This adjustment can be made by loosening the screws holding the stationary contacts and moving the contacts up or down as required.

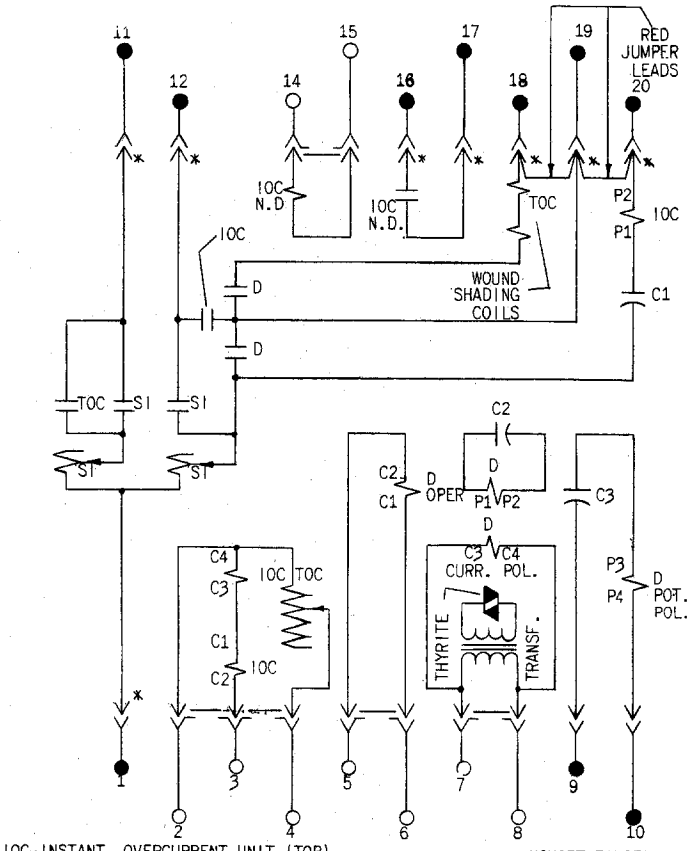

FIG. 2 (148A3982-1) Internal Connections for JBCG51K(-)Y1 and JBCG53K(-)Y1 Relays (Front View)

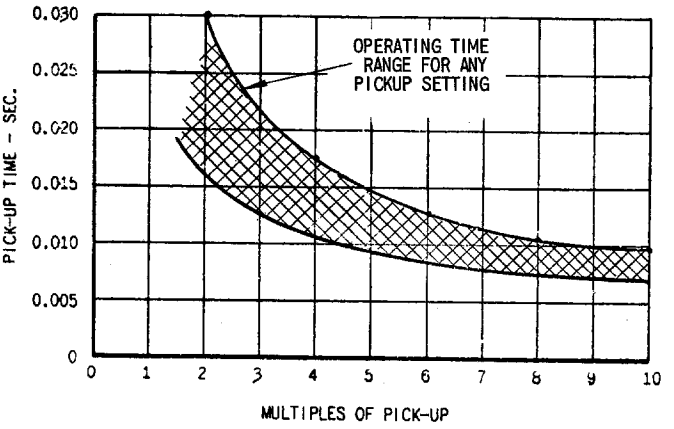

FIG.3 (K-6306872-5) Time-Current Curves for Instantaneous Unit