



INSTRUCTIONS

GEK-49859B
Insert Booklet GEI-30912

**AUXILIARY RELAY
TYPE HGA
MODEL HGA99AE**

GENERAL  ELECTRIC

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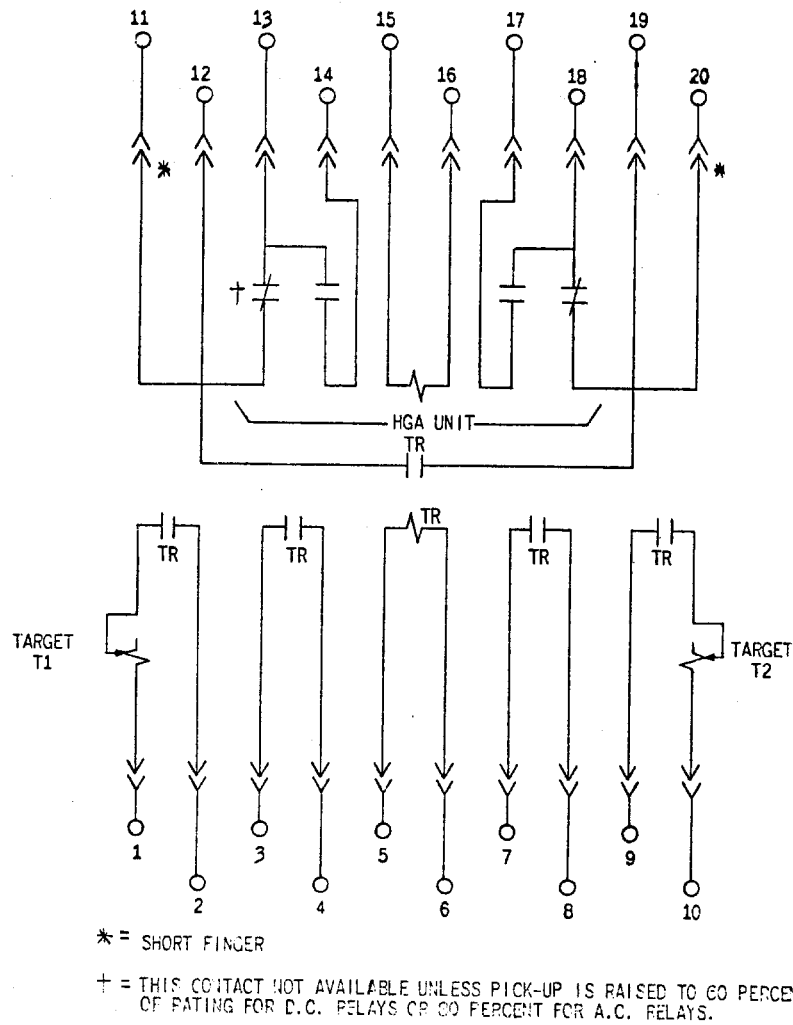


Fig. 1 (0246A2207-0) INTERNAL CONNECTIONS DIAGRAM FOR THE HGA99AE RELAY.

AUXILIARY RELAY

TYPE HGA

MODEL HGA99AE

INTRODUCTION

These instructions plus those included in GEI-30912 form the instructions for the model HGA99AE auxiliary relay. This relay supersedes special relays 0178A7472 and 208A8328.

DESCRIPTION

Model HGA99AE consists of an HGA unit, a telephone relay and two targets mounted in a small double ended (S2) case).

The HGA unit is similar to the HGA14A relay described in GEI-30912 except that it has no cover and is wired to the top terminals of the relay, as shown in Fig. 1. The outline and panel drilling dimensions are shown in Fig. 2 of this supplement.

The telephone-type unit has five normally open contacts, two of which have target units in series.

The target units have no contact connections.

RATINGS

Rating information is given in Table I.

TABLE I

MODEL	HGA UNIT	TELEPHONE RELAY	TARGETS
HGA99AE1A	250 VDC	20 VDC	0.2-2 AMPS
HGA99AE2A	125 VDC	20 VDC	0.6-2 AMPS
HGA99AE3A	125 VDC	20 VDC	0.2-2 AMPS

The interrupting ratings of the telephone-type units are given in Table II.

TABLE II

INTERRUPTING RATINGS OF TR UNIT

A-C VOLTS*	AMPS	
	INDUCTIVE*	NON-INDUCTIVE
115	0.75	2.0
230	0.5	1.5
D-C VOLTS		
48	1.0	3.0
125	0.5	1.5
250	0.25	1.0

*The inductive rating is based on the inductance of an average trip coil.

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.

CHARACTERISTICS

The HGA unit is adjusted at the factory to pick up at 30 percent of rating with one normally closed contact.

If two normally closed contacts are to be used, the relay should be adjusted by the control spring to pick up at the highest possible value without exceeding 60 percent of rating.

The telephone-type unit should pick up at 65 percent of rated voltage or less. All contact gaps should be 0.015 inches or more, wipe should be 0.005 inches or more. The contacts will make and carry three amperes continuously or 30 amperes for tripping duty.

The telephone-type unit is adjusted at the factory to pick up in 0.008 seconds or less at 14 volts. It is recommended that no further adjustment be made. However, if necessary, the following procedure should be followed:

1. To decrease the percentage of rated voltage at which the relay picks up, decrease the spacing of the armature from the pole face by bending the contact operating arm stop. After this adjustment, it will be necessary to readjust the wipe of the "a" and "b" contacts to 0.005 inch and the gaps to 0.015 inch. Lessening "b" contact pressure also decreases percentage pickup.

2. To increase the percentage of rated voltage at which the relay picks up, reverse the above procedure.

Pickup Time

3. To decrease pickup time reduce the pressure of the "b" contacts by bending the moving flexible contact arm.

To increase pickup time reverse the above procedure.

Drop-out Time

4. Drop-out time may be adjusted by means of the residual screw in the armature. The more the residual screw is turned in, the shorter the drop-out time. Note, pressure in the flexible contact arm also decreases drop-out time.

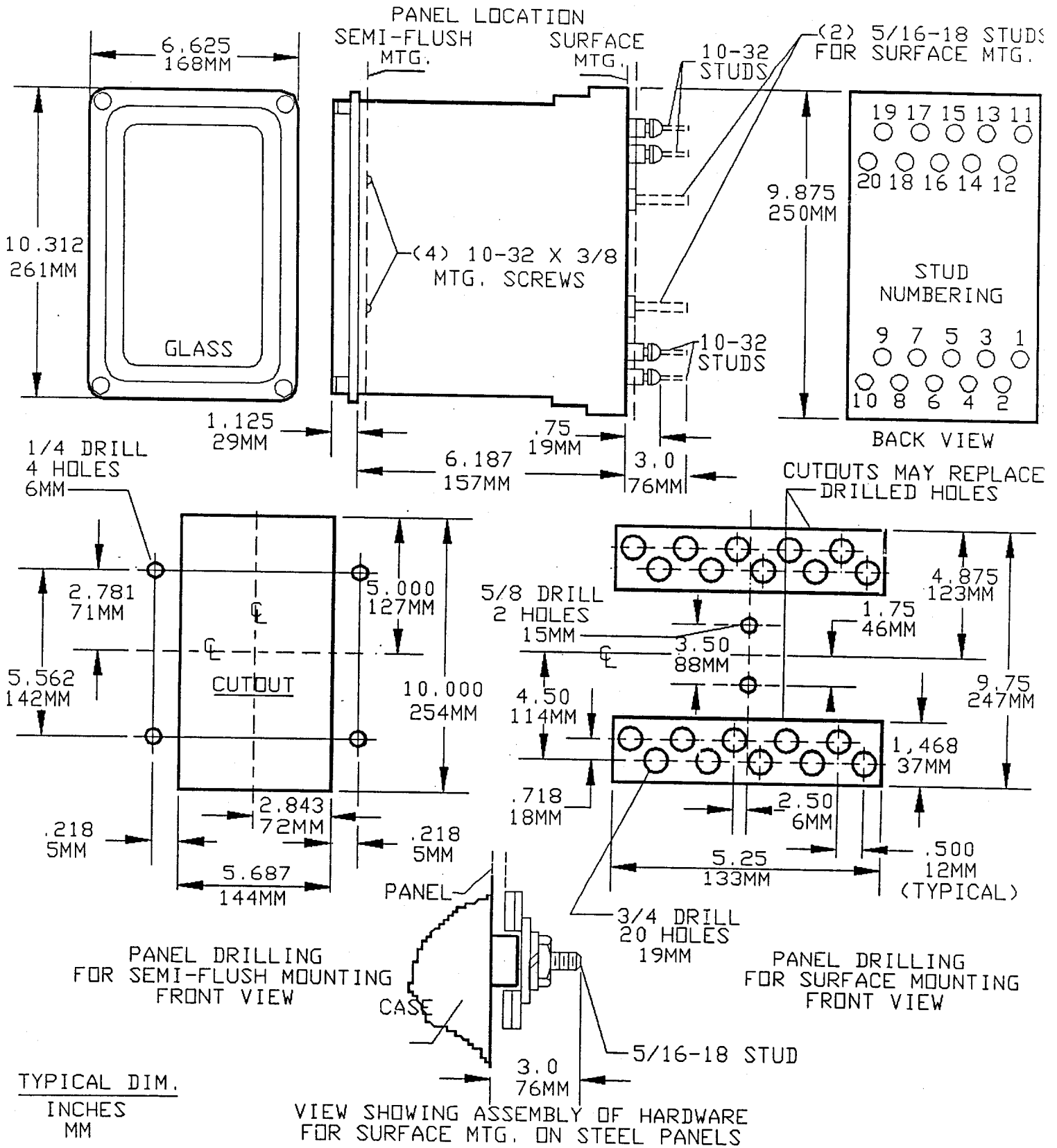
NOTE:

ANY CHANGE IN THE RESIDUAL SCREW SETTING MUST BE ACCOMPANIED BY READJUSTMENT FOR THE CORRECT CONTACT WIPES. THIS CAN MOST EASILY BE ACCOMPLISHED BY BENDING THE CONTACT OPERATING ARM WHICH EXTENDS FROM THE SIDE OF THE ARMATURE.

Characteristics of the target units are shown in Table III.

TABLE III
CHARACTERISTICS OF TARGET UNITS

TAP	0.2	0.6	2
DC RESISTANCE \pm 10% (OHMS)	7	0.6	0.13
MIN. OPERATING (AMPERES)	0.2	0.6	2.0
CARRY CONT. (AMPERES)	0.3	0.9	3
CARRY 30 AMPS FOR (SEC.)	0.02	0.5	4
CARRY 10 AMPS FOR (SEC.)	0.25	4	30
60 HZ IMPEDANCE (OHMS)	52	6	0.53



* Fig. 2 (K-6209272 [7]) OUTLINE AND PANEL DRILLING DIMENSIONS FOR THE HGA99AE RELAY

* Indicates revision



***Meter and Control
Business Department***

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*General Electric Company
205 Great Valley Parkway
Malvern, PA 19355*