



GE VERNOVA

RELAYS

INSTANTANEOUS CONTROL RELAYS

**TYPES HGA34A, HGA99AD
(Formerly 0156A2833)**

GEI-83911A

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INSTANTANEOUS RELAY
HCA31A
HGA99AD

INTRODUCTION

The HGA relay is an instantaneous, hinged-armature control relay having one normally open bridging contact. It is designed for use wherever a high-speed relay having a high contact-interrupting rating is required.

RATINGS

COILS

The HGA relay is available in all standard AC & DC voltage ratings 575 volts or less. Continuously rated coils yield relay-operating times of approximately 30 milliseconds. Intermittently rated (30 seconds) coils yield relay-operating times of approximately 10 milliseconds.

CONTACTS

The contacts will make and carry 60 amperes for tripping duty. The interrupting ratings are shown in Table A.

TABLE A
INTERRUPTING RATING

Volts DC	Amperes (Inductive)
125	6.5
250	3.0

BURDENS

The coil resistance of the DC continuously rated relays may be approximated by the following equation.

$$\text{Coil Ohms} = (\text{Voltage Rating})^2 \times 1/4$$

The coil resistance of the DC intermittently rated relays may be approximated by the following equation.

$$\text{Coil Ohms} = (\text{Voltage Rating})^2 \times 1/125$$

These instructions do not purport to cover all details or variations in equipment nor 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.

RECEIVING, HANDLING AND STORAGE

These relays, when not included as part of a control panel, will be shipped in cartons designed to protect them against damage. Immediately upon receipt of a relay, examine it for any damage sustained in transit. If injury or damage resulting from rough handling is evident, file a damage claim at once with the transportation company and promptly notify the nearest General Electric Sales Office.

Reasonable care should be exercised in unpacking the relay. If the relays are not to be installed immediately, they should be stored in their original cartons in a place that is free from moisture, dust, and metallic chips. Foreign matter collected on the outside of the case may find its way inside when the cover is removed and cause trouble in the operation of the relay.

DESCRIPTION

The contact circuit of this control relay is closed or opened by moving contact arms controlled by a hinge-type armature, which in turn is actuated by the operating coil and restrained by an adjustable control spring.

An adjusting screw and locknut can position the moving contact arm to set the contact gap. The normal factory adjustment of this gap is $7/64$ inch.

The armature, magnet and contact assemblies are all mounted on a compact molded compound base. The relay is front connected and is provided with a molded compound cover. The base and cover are molded to provide for the entrance of the connecting leads.

Small horseshoe permanent magnets are mounted in grooves in the base, and held in place by the stationary contact brackets. The contact buttons are fine silver.

Outline panel drilling and internal connections are shown in Figure 1 for the HGA34A relay, and Figure 2 for the HGA99AD relay.

INSTALLATION

LOCATION

The location should be clean and dry, free from dust and excessive vibration, and well lighted to facilitate inspection and testing.

MOUNTING

The relay should be mounted on a vertical surface. The outline and panel drilling dimensions of the HGA34A relay are given in Figure 1. See Figure 2 for the outline and panel-drilling dimensions of the HGA99AD.

CONNECTIONS

The internal connection diagram for the HGA34A is shown in Figure 1, and for the HGA99AD is shown in Figure 2. Note that terminal two of the relay must be connected to the positive side of the control power supply in order to obtain the correct magnetic blowout effect.

ADJUSTMENTS

The relays have been adjusted at the factory to meet the following requirements:

1. Continuously rated relays
 - a. Pickup: 80% or less of rating
 - b. Operating time at rated voltage: 30 ± 2 milliseconds
 - c. Contact gap: 3/32 inch minimum.
2. Intermittently rated relays:
 - a. Operating time at rated voltage: 10 ± 2 milliseconds
 - b. Contact gap: 3/32 inch minimum.

Pickup voltage or operating time may be altered by adjustment of the control spring and/or the contact gap.

PERIODIC TESTING

Auxiliary relay equipment should be checked for operation at regular intervals, preferably at the same time the associated devices are inspected.

CONTACT CLEANING

For cleaning fine silver contacts, a flexible burnishing tool should be used. This consists of a flexible strip of metal with an etch-roughened surface, resembling in effect a superfine file. The polishing action is so delicate that no scratches are left, yet corroded material will be removed rapidly and thoroughly. The flexibility of the tool ensures the cleaning of the actual points of contact. Sometimes an ordinarily file cannot reach the actual points of contact because of some obstruction from some other part of the relay.

Fine silver contacts should not be cleaned with knives, files, or abrasive paper or cloth. Knives or files may leave scratches that increase arcing and deterioration of the contacts. Abrasive paper or cloth may leave minute particles of insulating abrasive material in the contacts and thus prevent closing.

The burnishing tool described above can be obtained from the factory.

RENEWAL PARTS

It is recommended that sufficient quantities of renewal parts be carried in stock to enable the prompt replacement of any that are worn, broken, or damaged.

When ordering renewal parts, address the nearest Sales Office of the General Electric Company, specify the quantity required and the name of the part wanted, and give complete nameplate data. If possible, give the General Electric requisition number on which the relay was furnished.

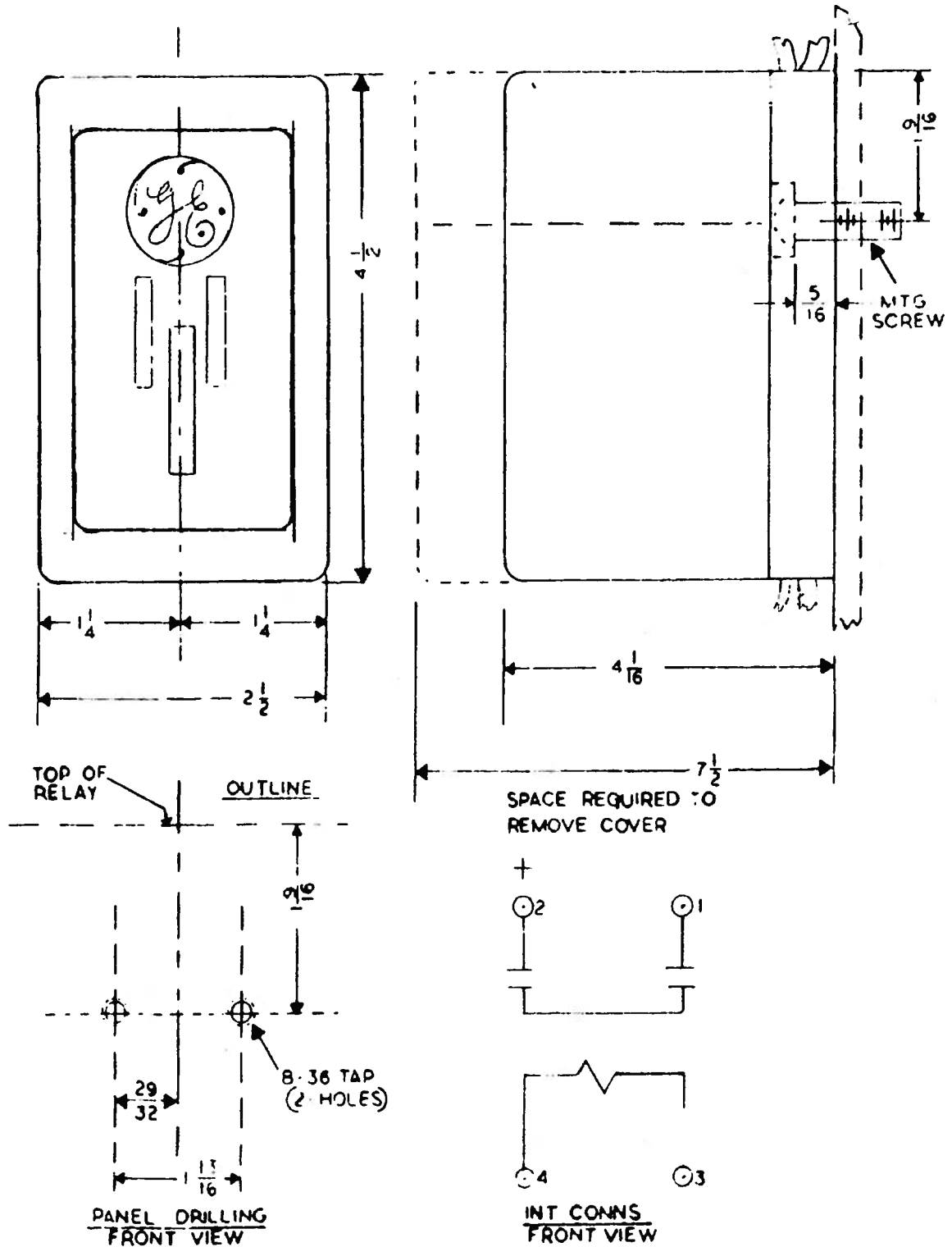


Figure 1 (0389A0707 [3]) Outline, Panel Drilling, and Internal Connections for the HGA34A relay

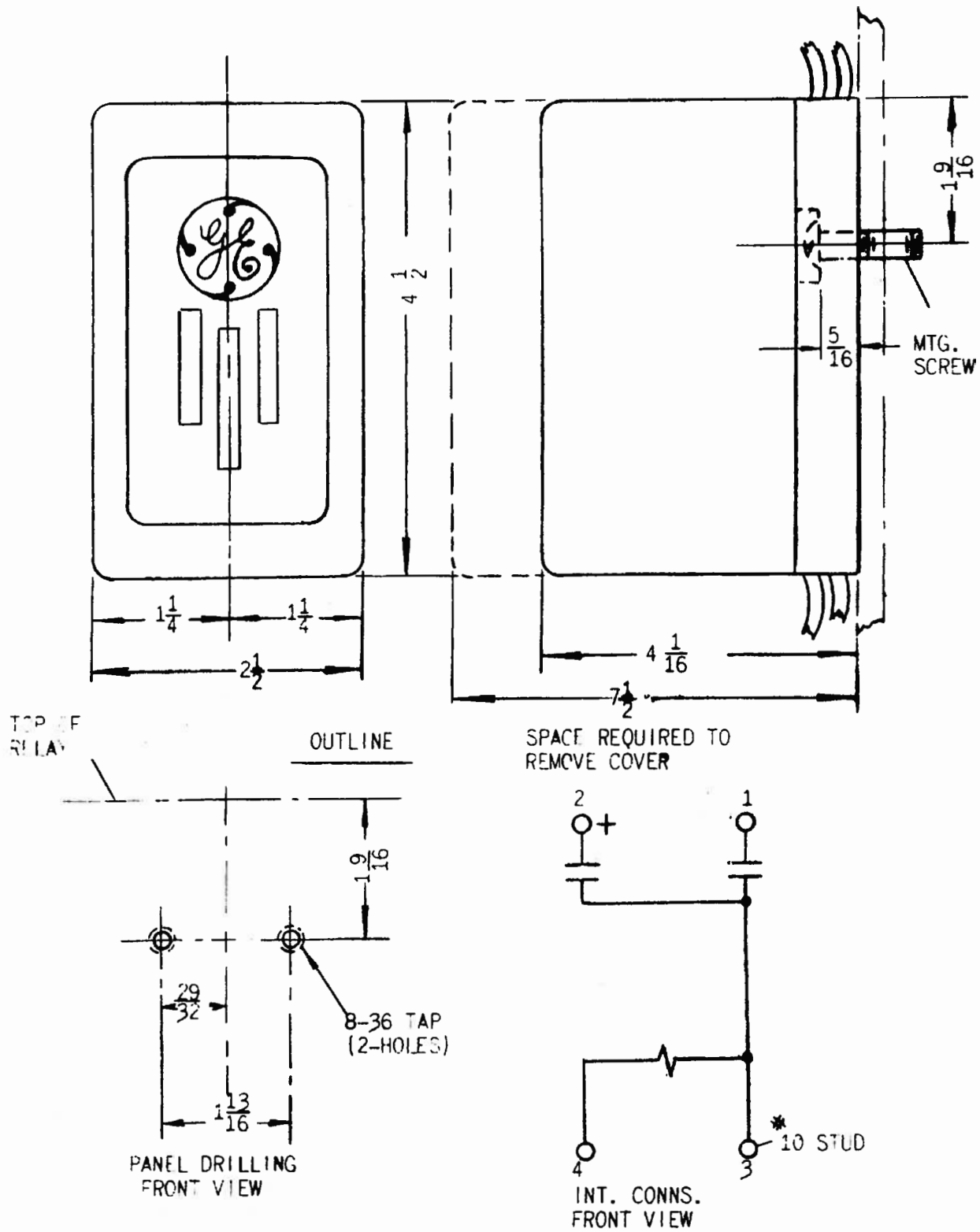


Figure 2 (0148A4049) Outline, Panel Drilling, and Internal Connections for the HGA99AD relay



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