INSTRUCTIONS GEK-33993C

AUXILIARY VOLTAGE RELAY

HAA19A

GENERAL ELECTRIC

AUXILIARY VOLTAGE RELAY

HAA19A

DESCRIPTION

The HAA19A relay is a d-c operated auxiliary relay and it is designed to be used in transformer protection schemes in which a transformer pressure relay is employed.

Included in the HAA19A relay are a telephone unit (A) and a target seal-in unit (TSI). The relay is mounted in a double-ended S2 case; the outline and panel drilling dimensions for which are given in Figure 4. The target seal-in unit and its associated contacts are brought out through the bottom studs. The top studs are used to bring out the telephone unit and its associated contacts. Internal connections for the HAA19A relay are shown in Figure 1. One HAA19A is required per transformer pressure relay.

APPLICATION

The HAA19A relay is designed to be used in protective schemes in which a transformer pressure relay is used. The combination of relays provide added security in such schemes. The characteristics of the relay are described in the section under CHARACTERISTICS. A typical application is illustrated in the external connection diagram shown in Figure 2.

Note that a normally closed contact of the pressure relay is connected across the target seal-in unit (TSI) coil of the HAA19A relay. This prevents a false trip should a voltage surge cause arcing across the normally open contacts of the pressure relay. In addition, the telephone unit will operate to seal in the target seal-in contacts and so maintain a continuous trip signal. A reset button, not included in the HAA19A, is used to reset the telephone unit.

RATINGS

The available voltage ratings are 48, 125, and 250 volt D.C. The target contacts will make and carry 30 amperes momentarily and will carry 6 amperes continuously. Table (A) shows the telephone relay contact rating.

RATING	CONTINUOUS CURRENT AMPS	TRIP DUTY AMPS	INTERRUPTION CURRENT (AMPS) INDUCTIVE	INTERRUPTION CURRENT (AMPS) NON-INDUCTIVE
48 VDC	3.0	30	1.0	3.0
125 VDC	3.0	30	0.5	1.5
250 VDC	3.0	30	0.25	1.0
115 VAC	3.0	30	0.75	2.0
230 VAC	3.0	30	0.5	1.5

TABLE A

The coil circuits with their series resistors are continuously rated for the voltage stamped on the * nameplate and the * maximum operating voltage is 80% of the voltage stamped on the nameplate.

CHARACTERISTICS

The pickup time of the telephone relay is less than 16 milliseconds at rated DC voltage and the pickup time of the target unit is shown in figure (3) in milliseconds vs. percent of rated voltage.

CONSTRUCTION

The HAA19 relay contains a target unit which is a small hinged armature type relay with a "U" shaped magnet frame, a fixed pole piece, an armature, which operates the normally open contacts and the target, and an operating coil. There is also a telephone relay with three normally open contacts.

ELECTRICAL TESTS

DRAWOUT RELAYS GENERAL

Since all drawout relays in service operate in their case, it is recommended that they be tested in their case or an equivalent steel case. In this way any magnetic effects of the enclosure will be accurately duplicated during testing. A relay may be tested without removing it from the panel by using a 12XLA13A test plug. This plug makes connections only with the relay and does not disturb any shorting bars in the case. Of course, the 12XLA12A test plug may also be used. Although this test plug allows greater testing flexibility, it also requires C.T. shorting jumpers and the exercise of greater care since connections are made to both the relay and the external circuitry.

POWER REQUIREMENTS GENERAL

All alternating current operated devices are affected by frequency. Since non-sinusoidal waveforms can be analyzed as a fundamental frequency plus harmonics of the fundamental frequency, it follows that alternating current devices (relays) will be affected by the applied waveform.

Therefore, in order to properly test alternating current relays it is essential to use a sine wave of current and/or voltage. The purity of the sine wave (i.e. its freedom from harmonics) cannot be expressed as a finite number for any particular relay, however, any relay using tuned circuits, R-L or RC networks, or saturating electromagnets (such as time overcurrent relays) would be essentially affected by non-sinusoidal wave forms.

Similarly, relays requiring dc control power should be tested using dc and not full wave rectified power. Unless the rectified supply is well filtered, many relays will not operate properly due to the dips in the rectified power. Zener diodes, for example, can turn off during these dips. As a general rule the dc source should not contain more than 5% ripple.

INSTALLATION PROCEDURE

1. Apply rated DC voltage between T12 and T13. The "A" telephone relay shall pick up in 12 to 16 milliseconds.
2. Apply 80 percent of rated DC between T12 and T13, the "A" telephone shall pick up.
3. Apply rated DC between T5 and T7, the target shall pickup within ±3 milliseconds of figure (3).

RECEIVING, HANDLING AND STORAGE

These relays, when not included as a 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 substained 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 Apparatus Sales Office.

Reasonable care should be exercised in unpacking the relay in order that none of the parts are injured or the adjustments disturbed.

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.

PERIODIC CHECKS AND ROUTINE MAINTENANCE

In view of the vital role of protective relays in the operation of a power system it is important that a periodic test program be followed. It is recognized that the interval between periodic checks will vary depending upon environment, type of relay and the user's experience with periodic testing. Until the user has accumulated enough experience to select the test interval best suited to his individual requirements it is suggested that the points listed under INSTALLATION PROCEDURE be checked at an interval of from one to two years.

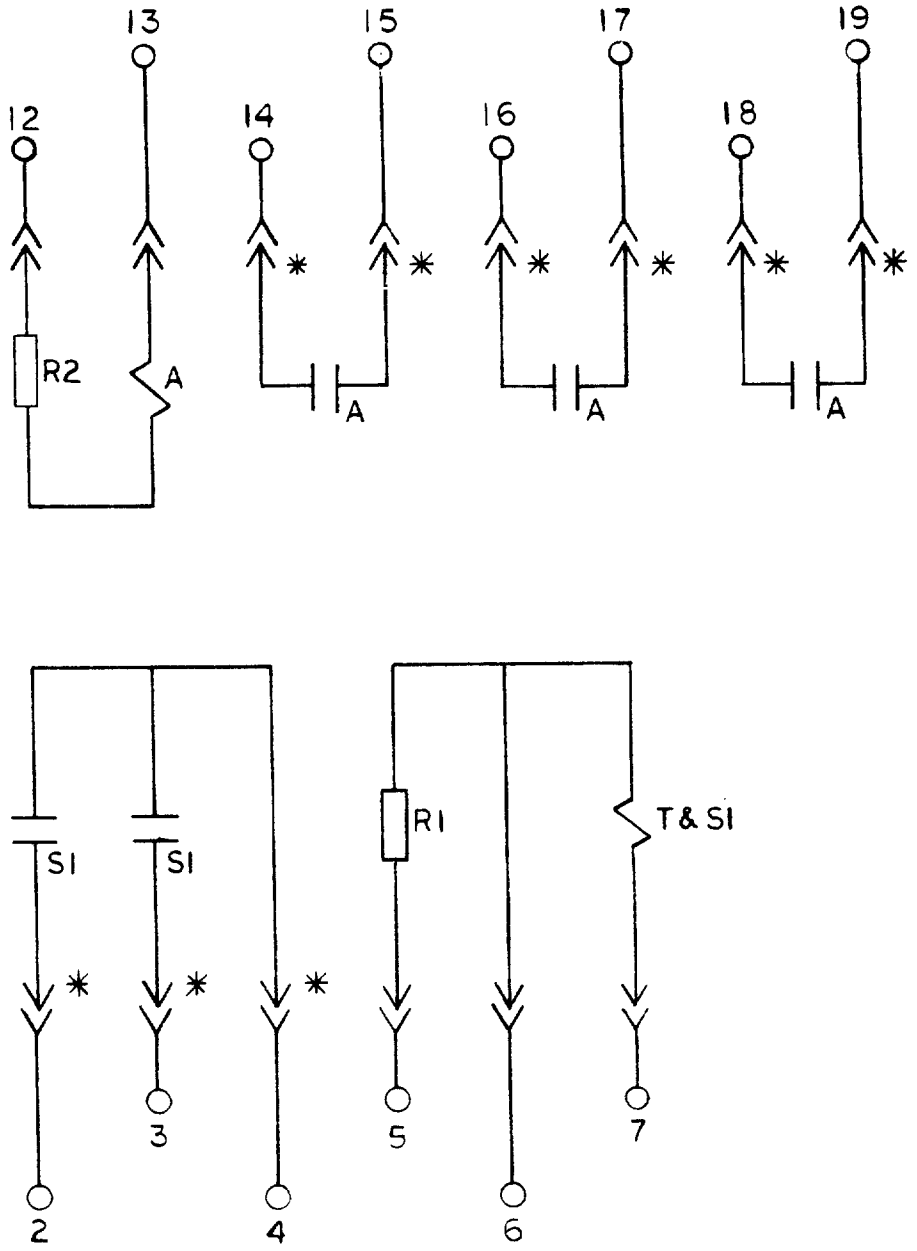
CONTACT CLEANING

For cleaning relay contacts, a flexible burnishing tool should be used. This consists of a flexible strip of metal with an etched-roughened surface resembling in effect a superfine file. The polishing action is so delicate that no scratches are left, yet it will clean off any corrosion throughly and rapidly. Its flexibility insures the cleaning of the actual points of contact. Do not use knives, files, abrasive paper or cloth of any kind to clean relay contacts.

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 quantity required, name of the part wanted, and the complete model number of the relay for which the part is required.



LEGEND

✳=SHORT FINGERS
T & SI =TARGET & SEAL-IN
A=TELEPHONE RELAY

FIGURE 1 (0227A7178) Internal Connection Diagram For Relay Type HAA19A (Front View)

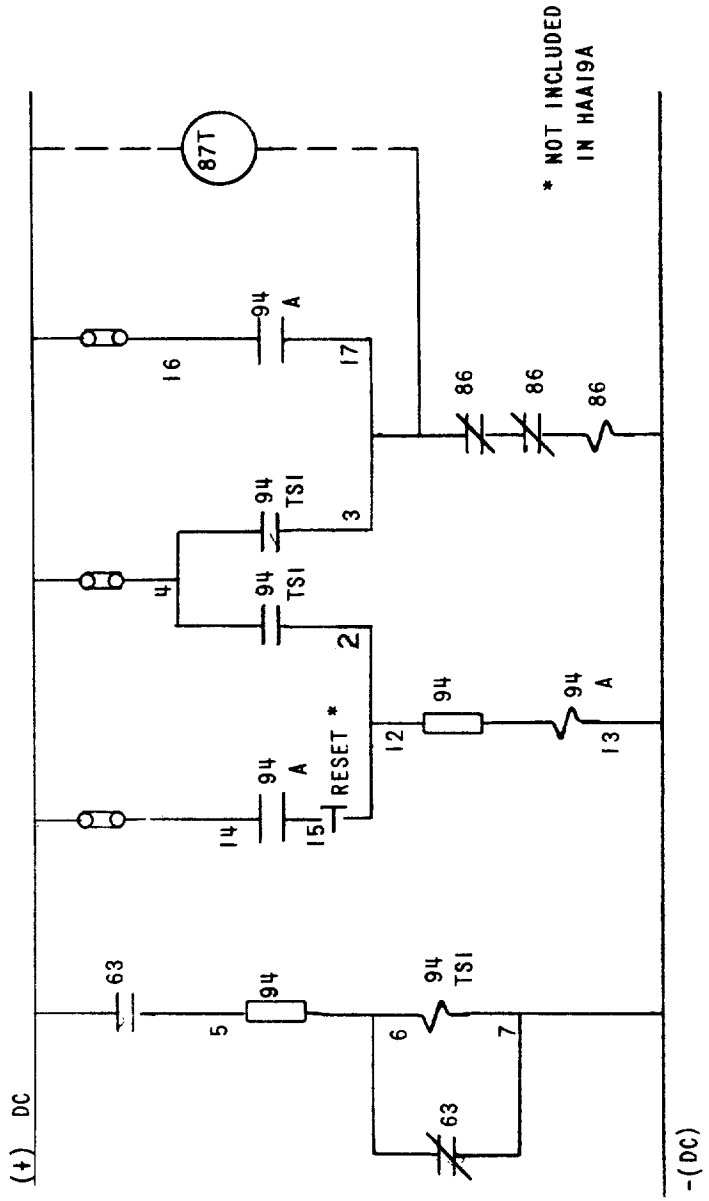


TABLE OF DEVICES

DEVICE NO.	RELAY MODEL	INCLUDING UNITS	DESCRIPTION
94	HAA19A	A TSI	AUXILIARY RELAY TELEPHONE UNIT TARGET SEAL-IN UNIT
63			TRANSF. PRESSURE SW.
86	HEA		LOCKOUT RELAY

FIG. 2 (0246A3384) Typical External Connections Diagram For The HAA19A Relay

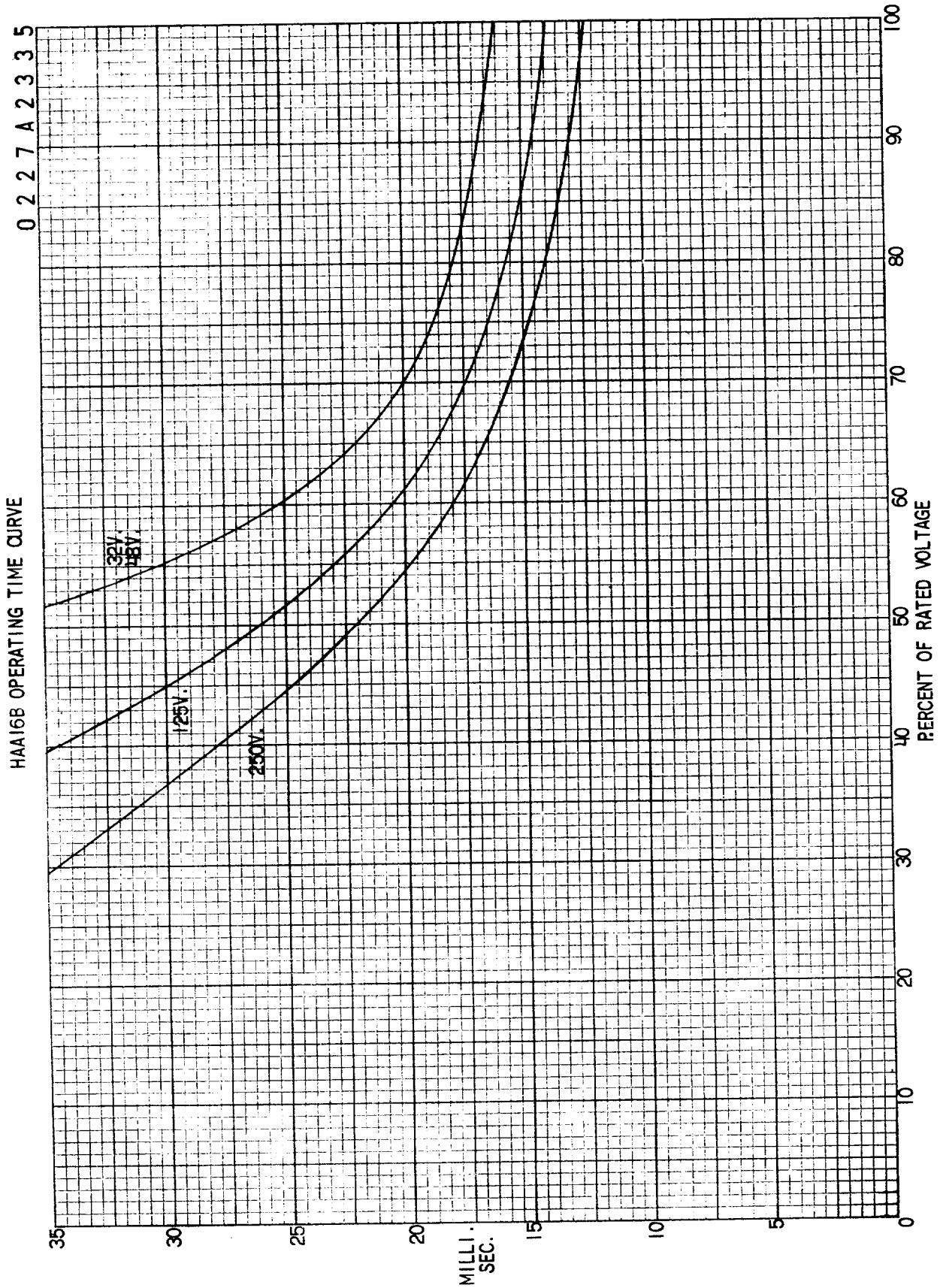


FIG. 3 (0227A2335-0) Typical Operating Time Curve For The HAA19A Target Unit

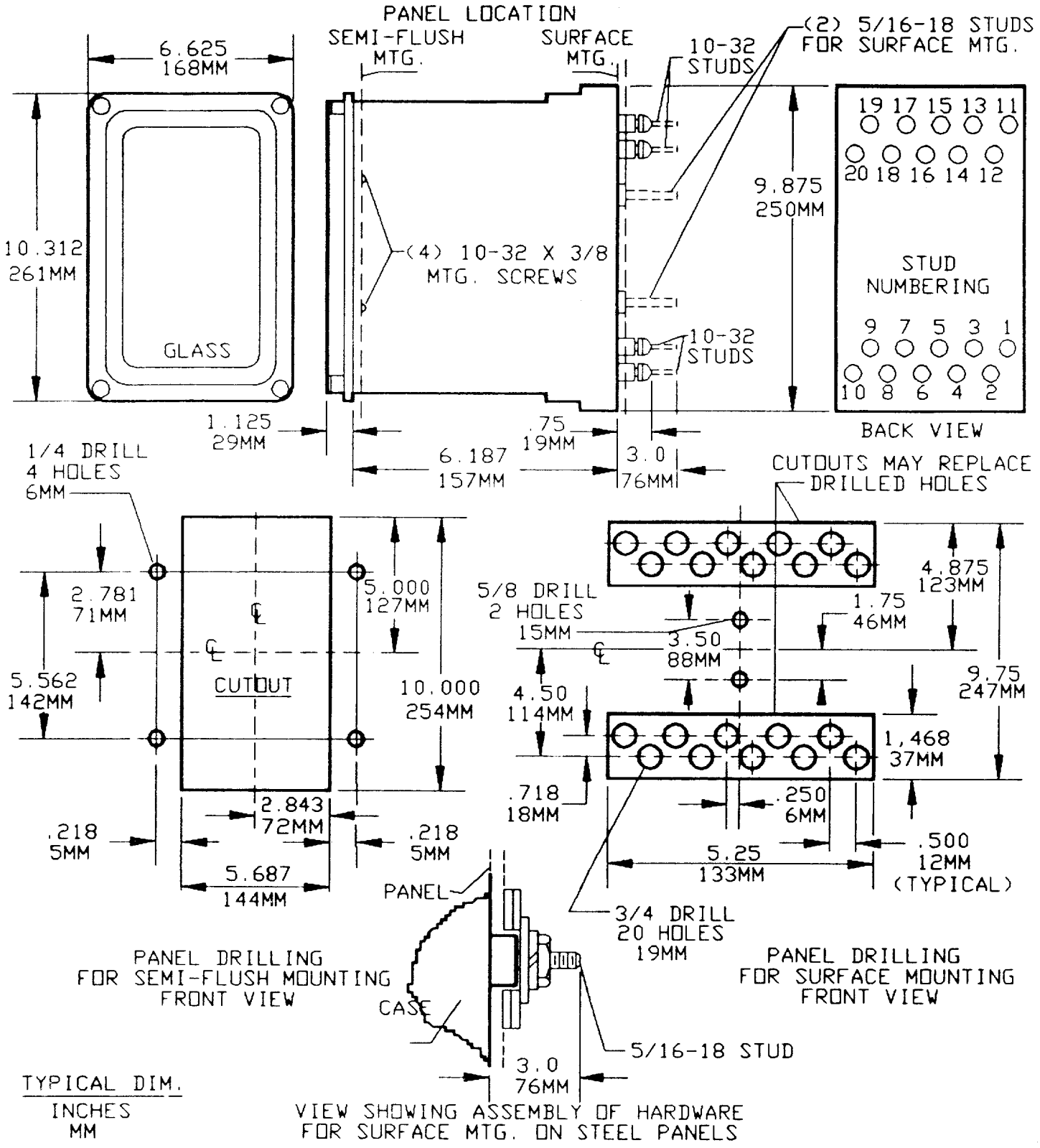


Figure 4 (6209272 [7]) Outline And Panel Drilling Dimensions For The HAA19A Relay

Since the last revision, there has been a change in Figure 4.

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