

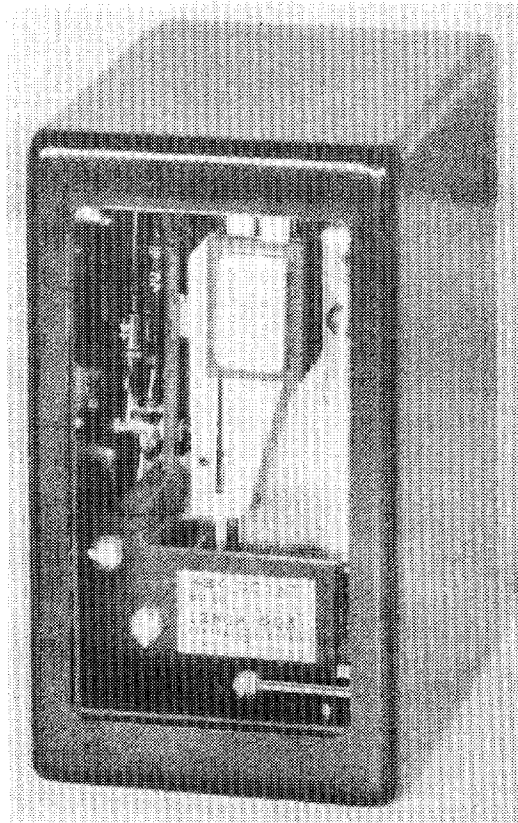


INSTRUCTIONS

GEI-98320B

SUPERSEDES GEI-98320A

AUXILIARY RELAY NGA15D



GENERAL  ELECTRIC

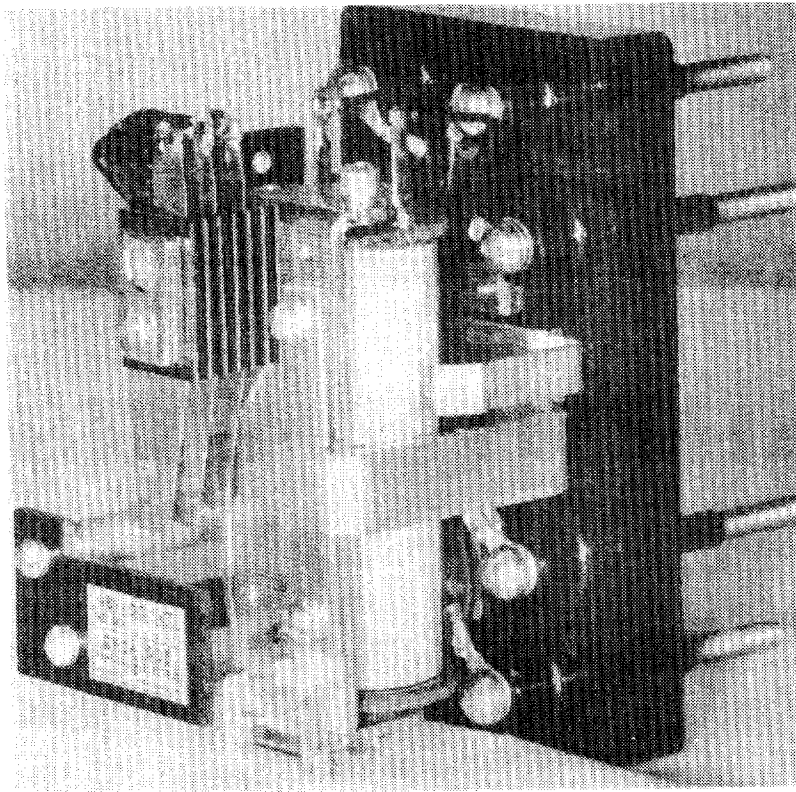


Fig. 1 (8035465) NGA15D Relay Cover Removed (Front View) Oblique From Right

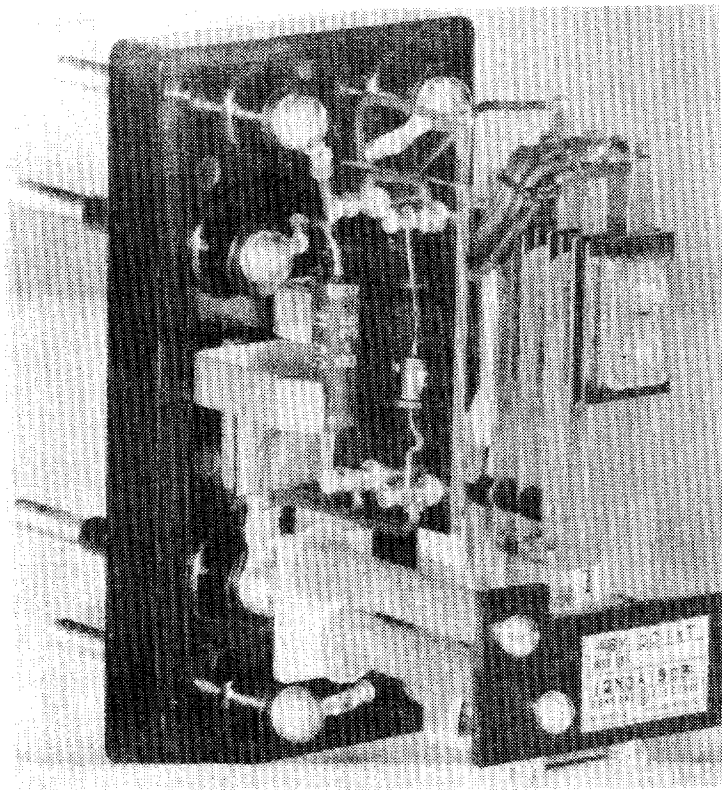


Fig. 2 (8035463) NGA15D Relay Ccver Removed (Front View) Oblique From Left

Cover (8035464)

AUXILIARY RELAY

NGA15D

INTRODUCTION

The NGA15D is a d-c operated auxiliary relay that has 3 electrically separate normally open contacts. This relay is supplied in a small molded case with dimensions shown in Figs. 7 and 8. The internal connections are shown in Figs. 3 and 4.

APPLICATION

The NGA15D was specifically designed for applications where it is required to initiate high speed reclosing from the operation of protective relays. The NGA15D is particularly well suited for this function because of its high speed pick up and time delay drop out. This relay will have a time delay drop out of about 7-10 cycles after the coil has been energized for only 2 cycles at rated voltage. It will pick up in less than 1 cycle at rated voltage.

Fig. 5 shows typical connections illustrating how the NGA15D may be used to initiate automatic reclosing after a high speed protective relay trip out, but not after a time delay trip out.

While the NGA15D relay may be generally applied wherever its operating characteristics meet the requirements, it should be noted that the relay is only intermittently rated at its nameplate voltage.

RATINGS

The relay contacts will close and carry 30 amperes DC momentarily for tripping duty at control voltages of 250V DC or less. These contacts will carry 3 amperes continuously and have an interrupting rating as given in Table A.

TABLE A

Volts	Current Inductive *	Current Non-Inductive
48	1.0	3.0
125V DC	0.5	1.5
250V DC	0.25	0.75
115V 60 Cyc.	0.75	2.0
230V 60 Cyc.	0.5	1.0

* Induction of Average Trip Coil

The resistance values of the operating coils and associated resistors are given in Figs. 3 and 4.

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 Apparatus 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.

When the relay is received, check the nameplate stamping to insure that model number and rating of the relay received agree with the requisition. Check the operation manually and also check that the contact gap and wipe agree with values given under the section on ADJUSTMENTS AND INSPECTION.

ADJUSTMENTS AND INSPECTIONS

The relay has been adjusted at the factory to pick up at 80 per cent or less of rated voltage and should not require further adjustment. If necessary the pickup can be decreased by decreasing the spacing of the armature from the pole face.

With the relay deenergized each normally open contact should have a gap of .010" - .015". Observe the wipe on each normally closed contact by deflecting the stationary contact member towards the frame. Wipe should be approximately .005".

The wipe on each normally open contact should be approximately .005". This can be checked by inserting a .005" shim between the residual screw and the pole piece and operating the armature by hand. The normally open contacts should make before the residual screw strikes the shim.

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.

GEI-98320 Auxiliary Relay NGA

In order to decrease the pickup time of the relay, reduce the pressure of the normally closed contacts by bending slightly the movable flexible contact arm.

After each adjustment the contact gap and wipe must be rechecked and the contact pressure should never be less than 10 grams measured at the contact tips.

All of the adjustments in this section may be most easily made with the tools supplied in the relay tool kit XRT11A1.

SERVICING

* 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

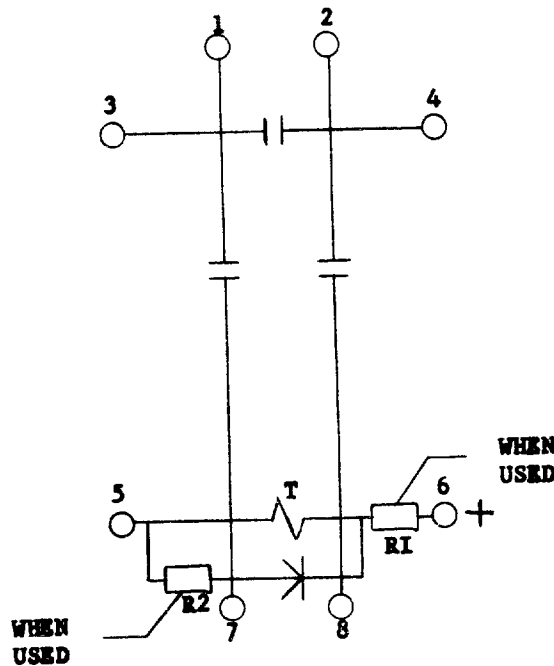
ACCEPTANCE TESTS be checked once a year.

For cleaning contacts a flexible burnishing tool should be used. This consists of an etched roughened strip of flexible metal, resembling a superfine file which removes corroded material quickly without scratching the surface. The flexibility of the tool insures the cleaning of the actual points of contact. Never use knives, files, abrasive paper or cloth to clean contacts. A burnishing tool as 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.

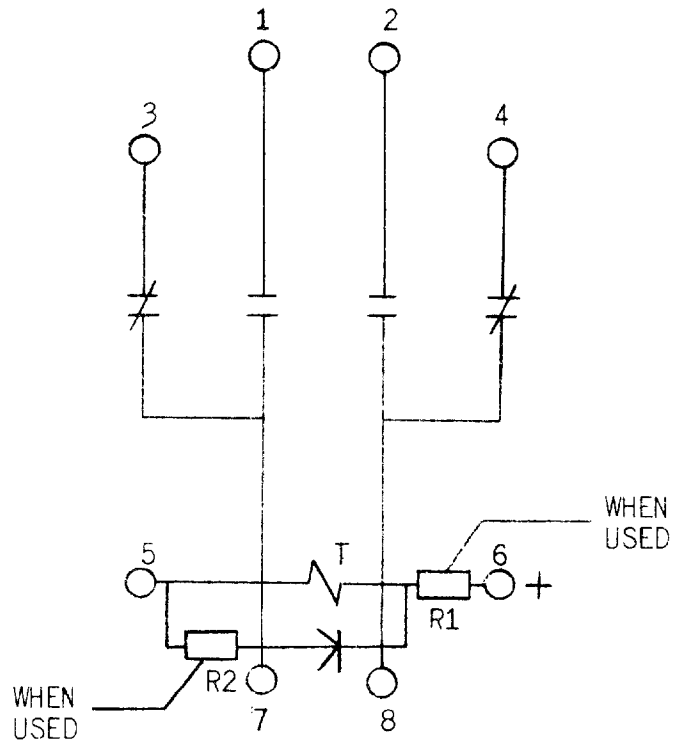
When ordering renewal parts, address the nearest Sales Office of the General Electric Company, specify quantity required, name of the part wanted and give complete nameplate data. If possible, give the General Electric requisition number on which the relay was furnished.



BACK VIEW

	DC VOLTS INTERNAL 10 (SEC.)	P. U. TIME MILLISECONDS	DROPOUT TIME MILLISECONDS	FORMS		
				T	R1	R2
NGA15D1	250	16	116 - 167	1000	3000	NONE
NGA15D2	125	16	116 - 167	1000	1000	NONE
NGA15D3	48	16	116 - 167	500	NONE	50

Fig. 3 (0178A7091-1 Sh. 1 - Sh. 2 - Rev. 0) Internal Connections Diagram and Table of the NAA15D Relay

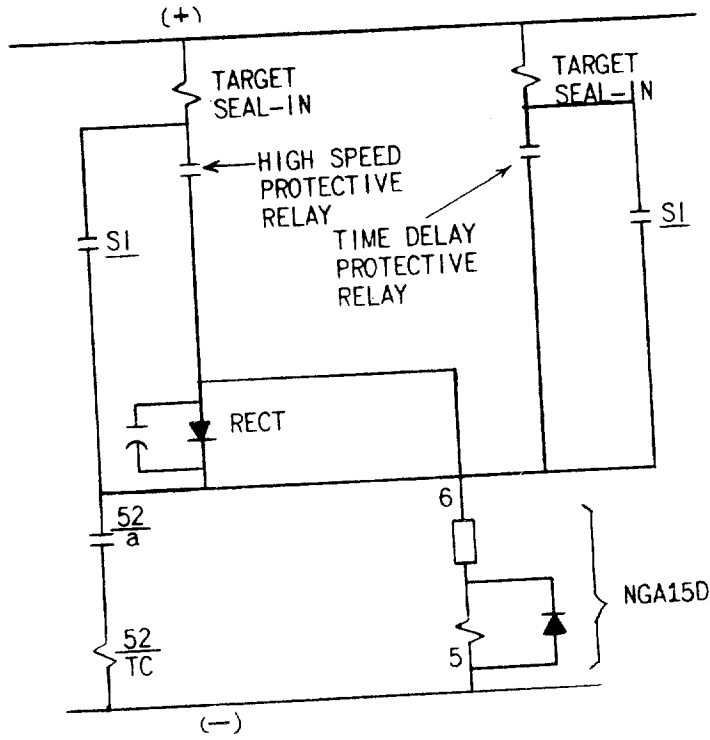


BACK VIEW

	DC VOLTS IN TMT. 10 (SEC.)	P.U. TIME MILLISECONDS	DROPOUT TIME MILLISECONDS	OHMS		
				T	R1	R2
NGA15D5	250	16	116-167	1000	3000	NONE
NGA15D6	125	16	116-167	1000	1000	NONE
NGA15D7	48	16	116-167	500	NONE	50
<i>NGA15D8</i>	<i>220</i>	<i>16</i>	<i>116-167</i>	<i>1000</i>	<i>3000</i>	<i>NONE</i>

Fig. 4 (0203A8556-0 Sh. 1 & 0203A8556-1 Sh. 2) Internal Connections Diagram for the NGA15D Relay.

GEI-98320 Auxiliary Relay NGA



CONTACTS TO INITIATE OPERATION OF AUTOMATIC RECLOSING RELAY

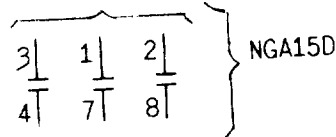


Fig. 5 (0178A7108-0) Typical External Connections For Type NGA15D Relay When Used To Initiate Automatic Reclosing

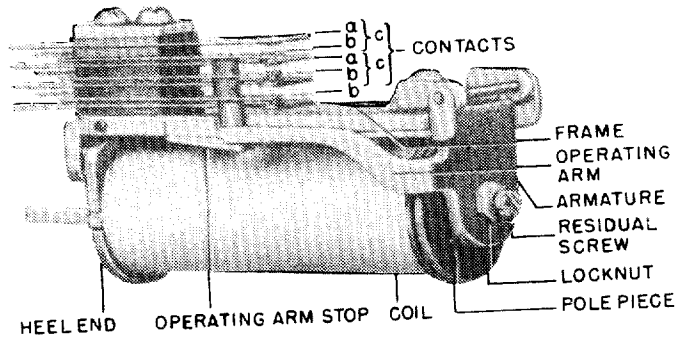
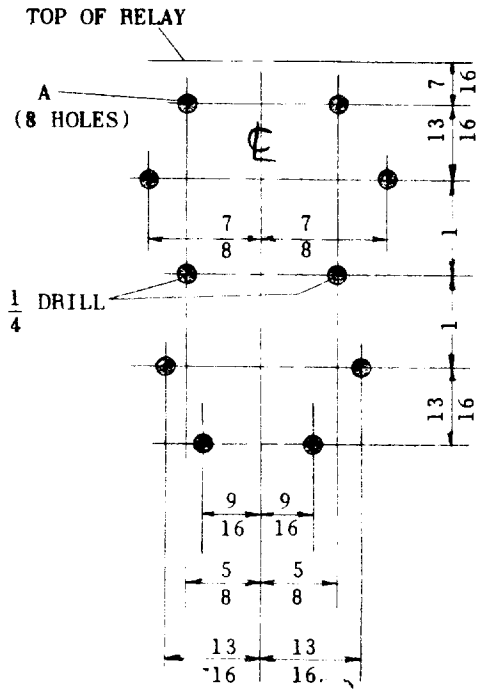
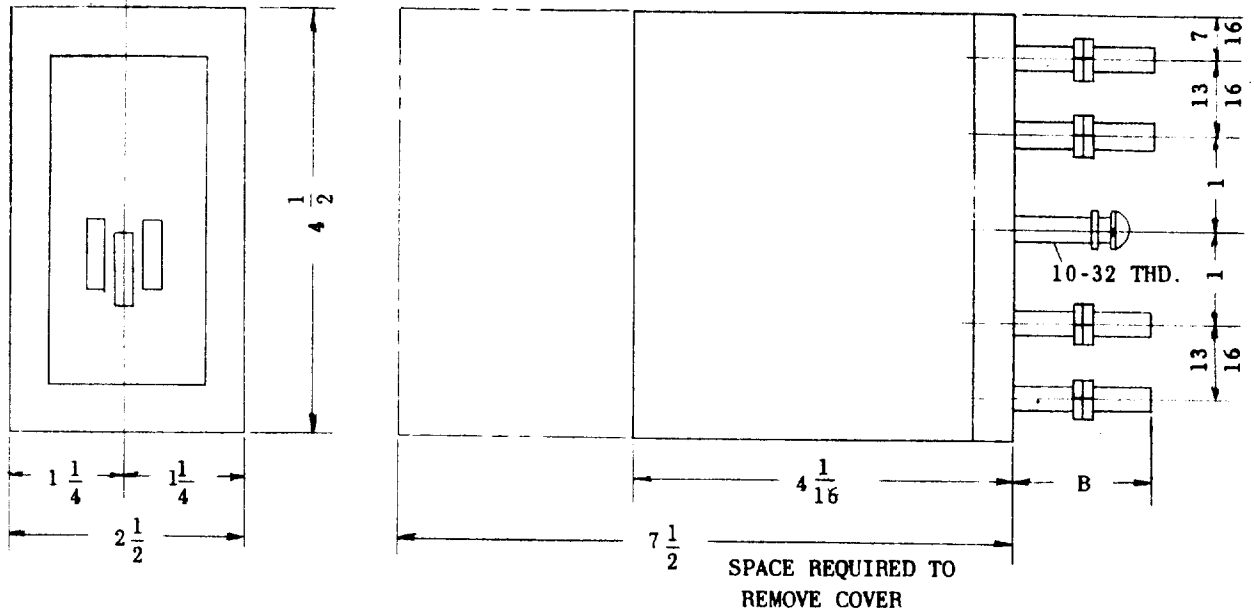


Fig. 6 (8012106) Typical Telephone-Relay Unit Used In The NGA15D Relay



OUTLINE

TYPE OF PANEL	A	B
INSULATING	7/16	2 - 13/16
STEEL	9/16	1 - 3/8

PANEL DRILLING (FRONT VIEW)

Fig. 7 (0148A3979-3) Outline And Panel Drilling Dimensions For The Projection Mounted NGV15D Relay

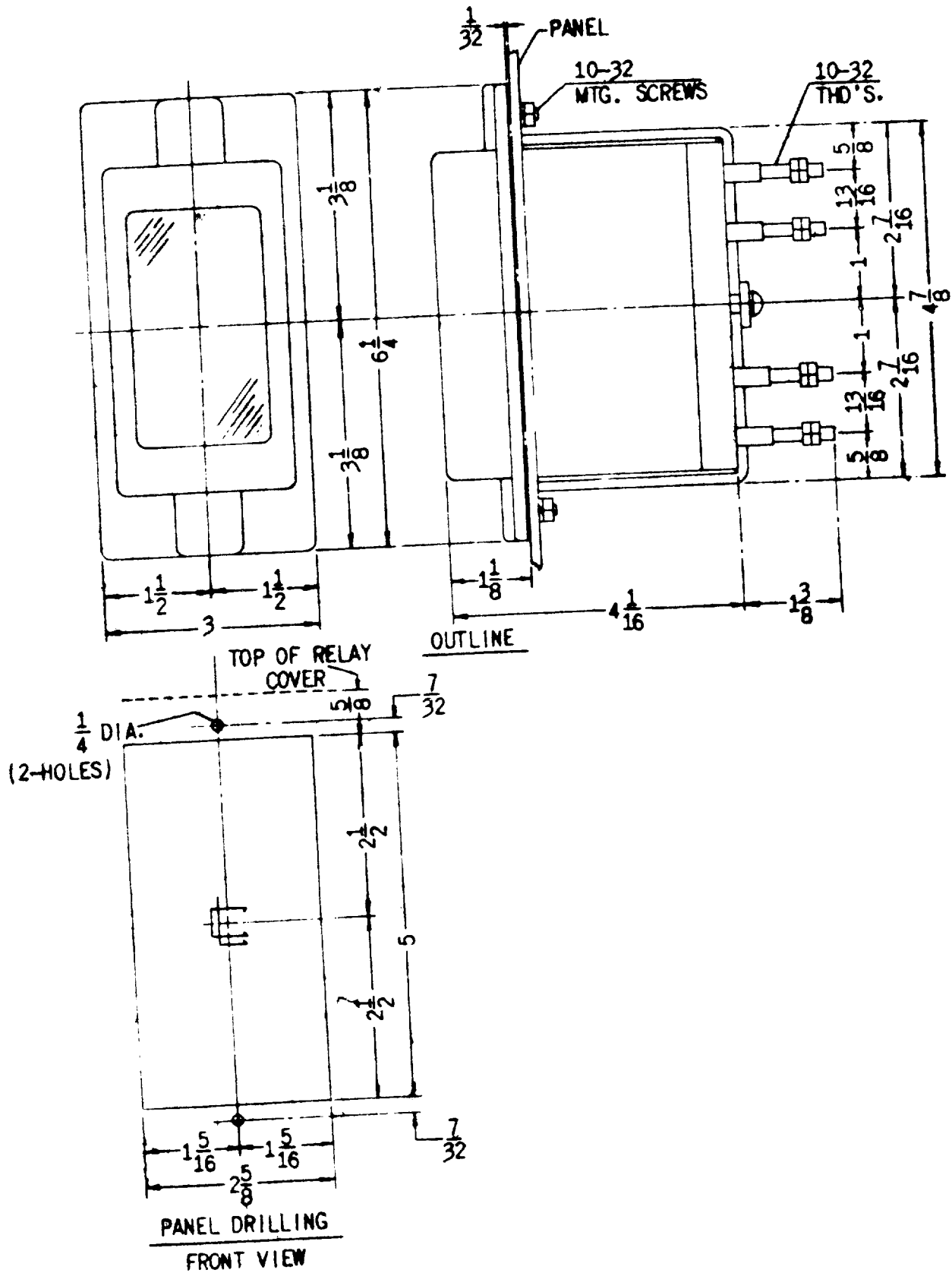


Fig. 8 (0148A3978-3) Outline And Panel Drilling Dimensions For The Semi-Flush Mounted NGA15D Relay