



# **INSTRUCTIONS**

GEK-27852A

INSERT BOOKLET GEK-27877

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STATIC AUXILIARY TRIPPING RELAY

TYPE SLA12T

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**POWER SYSTEMS MANAGEMENT DEPARTMENT**

**GENERAL  ELECTRIC**



STATIC AUXILIARY TRIPPING RELAY

TYPE SLA12T

DESCRIPTION

These instructions supplement the basic SLA instruction book, GEK-27877, which is included in this book. The combination of the two forms instructions for Type SLA12T relay.

The Type SLA12T relay is an auxiliary logic and tripping unit for use with Type CS26B carrier equipment in directional comparison schemes with one phase relay and one ground relay. Optional relays that may be used with the Type SLA12T are an out-of-step (SLL) relay, a data-logging-amplifier (DLA), and one additional auxiliary (SLA) relay for additional output circuits.

The models of this relay are tabulated below to show the corresponding battery voltages for each model.

MODEL	RELAY POWER SUPPLY DC VOLTAGE	TRIP CIRCUIT DC VOLTAGE	INTERNAL CONNECTIONS
SLA12T1	125	125	FIG. 1
SLA12T2	48	250	FIG. 1
SLA12T3	48	125	FIG. 1
SLA12T4	250	250	FIG. 1
SLA12T6	125	125	FIG. 2

The Type SLA12T relay provides the following output functions:

- 1) Two electrically separate silicon controlled rectifier (SCR) tripping circuits, each containing a series, hand-reset, mechanical target and a reed relay. The reed relay is part of a logic circuit which permits the target lamps to light only if trip current has flowed in the SCR trip circuit.
- 2) A breaker failure initiation (BFI) auxiliary telephone-type relay with two normally open, electrically separate contact outputs. Type SLA12T5 relay BFI function includes a third BFI normally open contact designated as ER.
- 3) A reclose initiation (RI) auxiliary telephone-type relay with two normally open, electrically separate contact outputs.
- 4) Four indicating lamps designate the type of local trip as follows:  
 Carrier Phase Trip------(PH)  
 Carrier Ground Trip------(G)  
 Instantaneous Phase Overcurrent Trip------(P4)  
 Instantaneous Ground Overcurrent Trip------(G4)
- 5) Two contact converters are provided to enable the user to control the local carrier transmitter from external contacts.

Closure of an external set of contacts produces a logic output from contact converter 61 which stops all local carrier. This feature is sometimes employed in conjunction with breaker failure schemes.

*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.*

Closure of another set of contacts produces a logic output from contact converter 62 which blocks received-carrier tripping and relay control of carrier transmitter but permits auxiliary use of the carrier transmitter. Normally this set of contacts is part of the CCS (Channel Cutoff Switch), which is closed in the CO (Cutoff) position.

The relay also contains channel control and logic circuitry necessary for the coordination of a directional comparison scheme.

The circuitry for the above functions is shown on the internal connection diagrams (Figs. 1, 2). The component location diagram is shown in Figure 3, and the outline and mounting dimensions are shown in Figure 4.

#### APPLICATION

Information describing the output circuits, target operation, and the operation of the scheme can be obtained by referring to the overall logic diagram and descriptive writeup. This section covers the timer settings which are basically provided for field adjustment by the user. The procedure for setting timers is given in the basic SLA instruction book.

#### TIMER SETTINGS

1. The 5-30/0 timer is provided to enable the user to control the number of lamps which will light under fault conditions. With a short pickup setting (5-10 ms) only those lamps associated with the functions which first sensed the fault will light. With longer pickup settings, all lamps associated with functions which operated will light.

2. The P/5-32 timer adds security to the relay scheme by prolonging blocking-transmission after an external fault is cleared. A reset time on the order of 18 ms to 20 ms is suggested.

#### RATINGS

The operating times of the telephone-type relays are shown below:

BFI PICKUP TIME	3 - 5 milliseconds
BFI DROPOUT TIME	14 - 17 milliseconds
RI PICKUP TIME	14 - 17 milliseconds
RI DROPOUT TIME	130 - 160 milliseconds

#### D-C BURDEN

Each contact converter, when energized, will draw approximately 11 milliamperes from the station battery.

When energized, the burden of the BFI coil circuit requires approximately 185 milliamperes from a 48 V station battery or 48 milliamperes from a 125 V battery.

The maximum current required from the SSA power supply is 300 milliamperes plus 80 milliamperes for each target lamp.

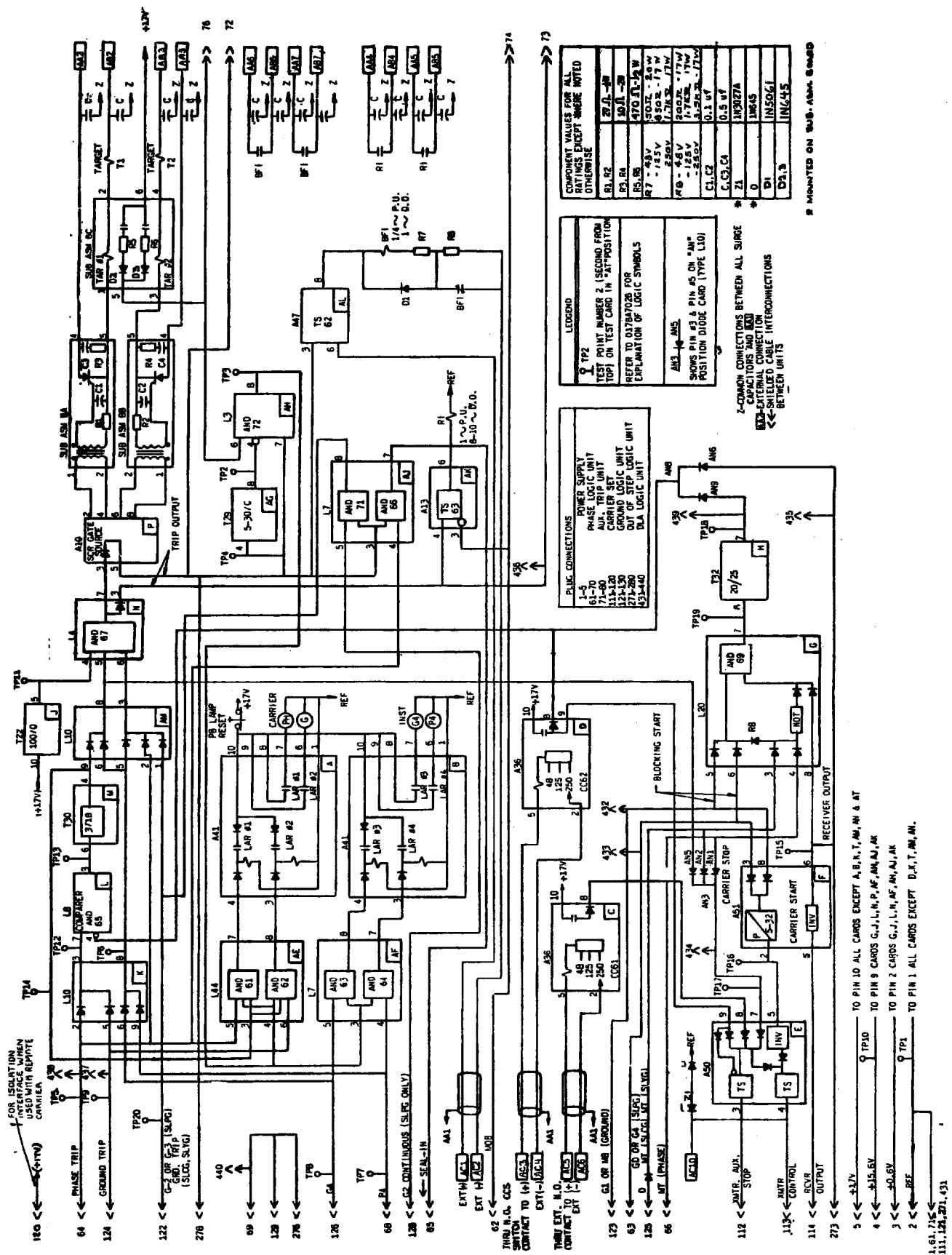


FIG. 1 (0133C4315-7) INTERNAL CONNECTION DIAGRAM FOR THE SLA12T1, 2, 3, 4 LOGIC UNITS

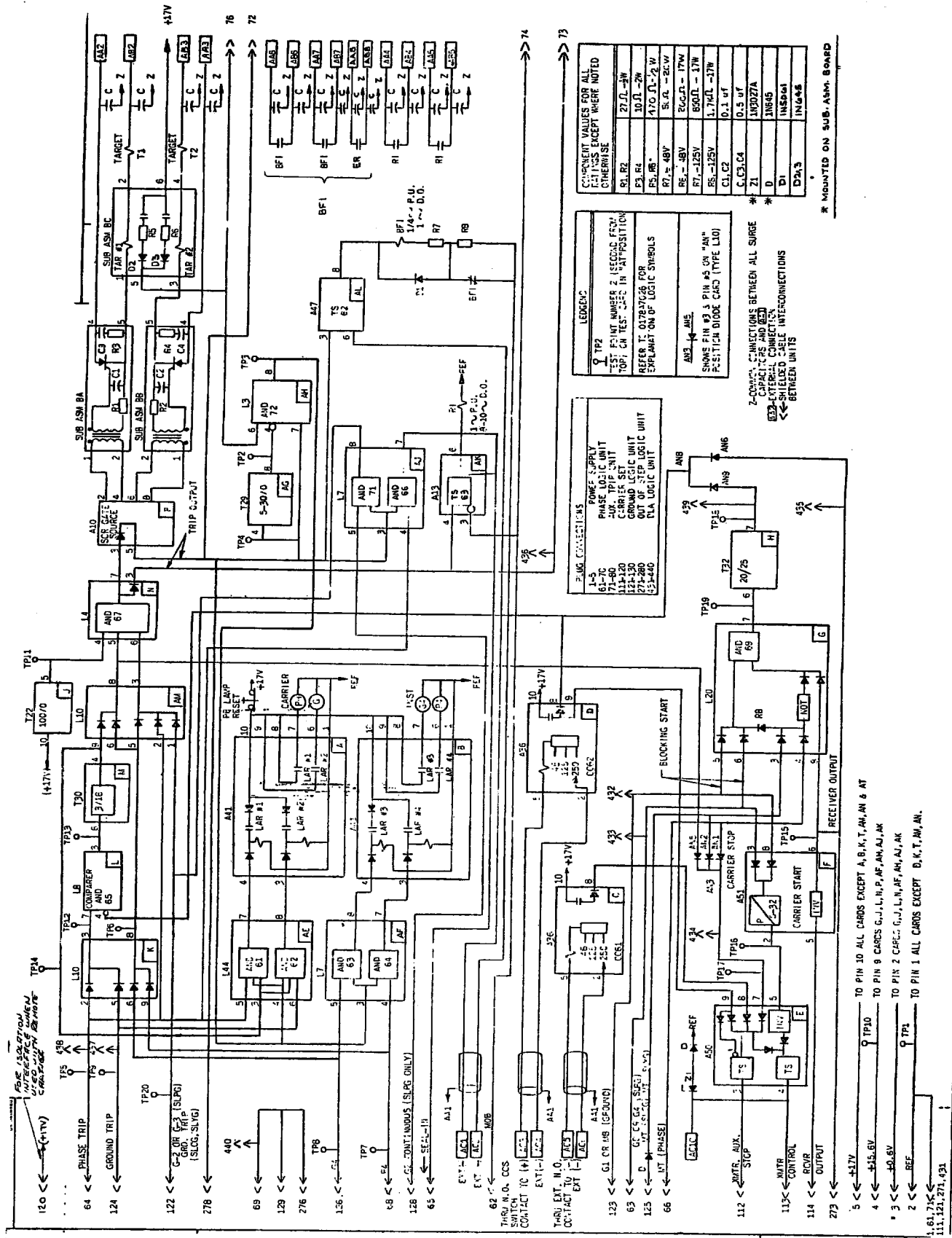
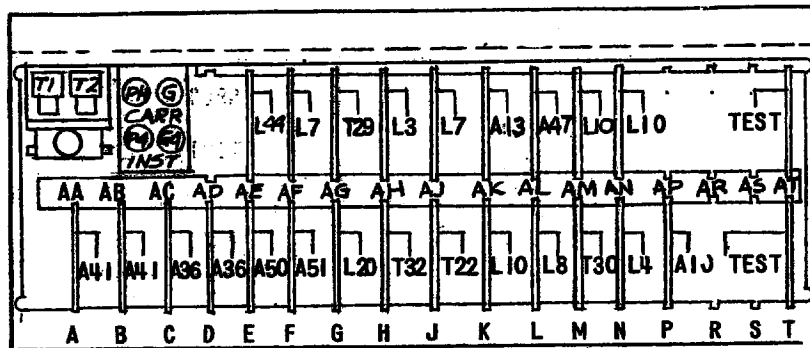
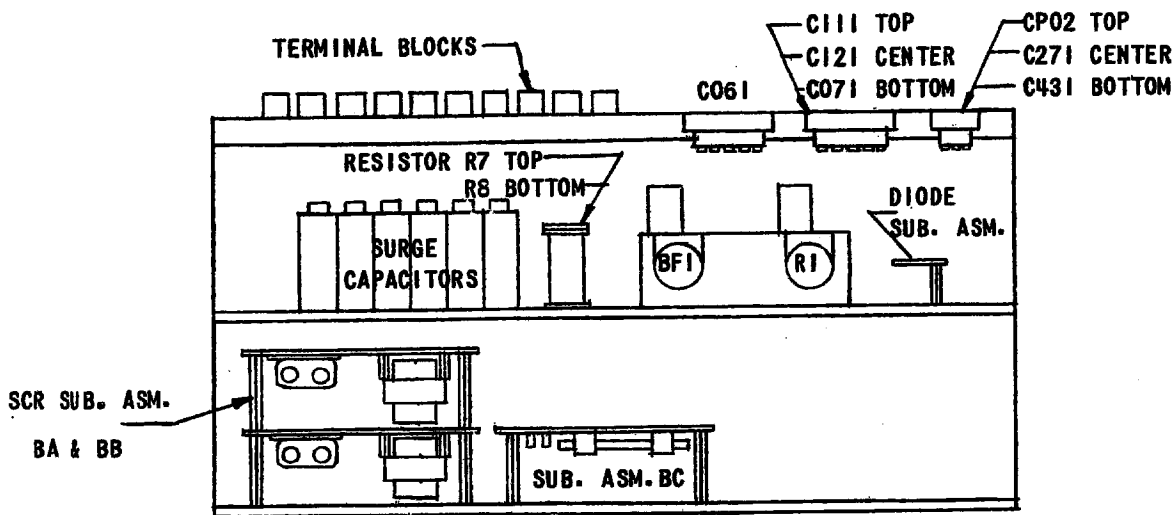


FIG. 2 (0133C9946-0) INTERNAL CONNECTION DIAGRAM FOR THE SLA12T6 LOGIC UNIT



PRINTED CIRCUIT CARD REFERENCE

TYPE	POSITION	CAT. NUMBER	TYPE	POSITION	CAT. NUMBER
A10	P	011686702 GR-1	L7	AF	011686680 GR-1
A13	AK	012788175 GR-1	L8	L	012788145 GR-1
A36	C	013887982 GR-1	L10	K	011684987 GR-1
A36	D	013887982 GR-1	L10	AM	011684987 GR-1
A41	A	011681951 GR-1	L10	AN	011684987 GR-1
A41	B	011681951 GR-1	L20	G	012882245 GR-1
A47	A L	016583577 GR-1	L44	AE	016582080 GR-1
A50	E	016584605 GR-1	T22	K	012882327 GR-1
A51	F	016582030 GR-1	T29	AG	013738452 GR-2
L3	AH	011684989 GR-1	T30	M	013887940 GR-1
L4	N	011684939 GR-1	T32	H	013887944 GR-1
L7	AJ	011686680 GR-1	TEST	T	011686672 GR-1
			TEST	AT	011686672 GR-1

FIG. 3 (0226A7224-0) COMPONENT LOCATION DIAGRAM FOR THE SLA12T RELAY

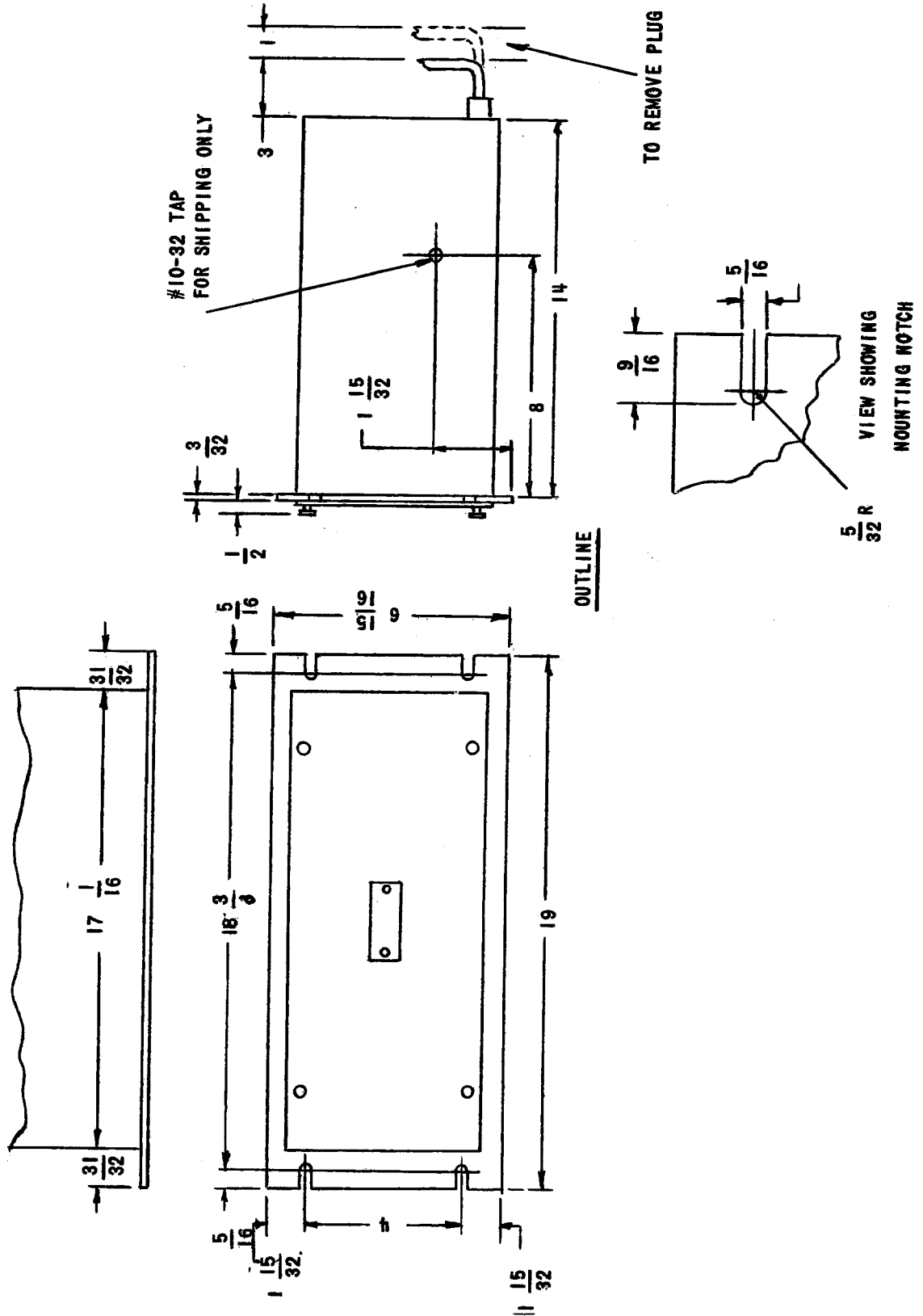


FIG. 4 (0165A7662-3) OUTLINE AND MOUNTING DIMENSIONS FOR THE SLA12T RELAY