



INSTRUCTIONS

GEK-7350

RECLOSING RELAY

Type NLR11E

INTRODUCTION

These instructions are a supplement to instruction book GEK-1269 which is included in this book. The combination of the two form instructions for the NLR11E relay.

APPLICATION

The NLR11E reclosing relay is designed to automatically reclose a breaker which is feeding a transmission line. The NLR11E relay is similar to the NLR11B relay with the following exceptions:

1. The NLR11E relay contains an auxiliary closing relay, "CX", which stops the timer when each reclosing position is reached to wait for the synchronous check relay to complete the reclosing circuit.
2. The "RS" unit is adjusted and connected internally in such a way that an instantaneous reclosure is initiated only when the initial trip signal closed the contact marked "RI" in Fig. 2 of this supplement. If the breaker is tripped by protective relays which do not close the "RI" contact, then the NLR11E relay runs to the first delayed reclosing position before reclosing the breaker. The time to the first delayed reclosing is the same whether there was an instantaneous reclosure or not.
3. Provision is made for bypassing the synchronous check relay contacts during an initial instantaneous reclosure if desired.

4. A contact of the CX unit is connected to studs 7 and 8. This contact can be used to energize the synchronous check relay if desired.

OPERATION

The NLR11E relay operation is similar to the NLR11B relay except as follows:

The NLR11E relay provides for four reclosure settings, one fixed instantaneous and three adjustable time delayed, just as the NLR11B relay does. However, if the initial breaker trip does not cause the "RI" contact to close (see Fig. 2 of this supplement), then no instantaneous reclosure is initiated. When the breaker auxiliary switch, 52b, closes, it runs the timer through diode D1 but does not provide a breaker closing signal since the "RS" contact, in the closing circuit, is open during the first two step time intervals. This keeps the CX and C units de-energized and no breaker closing signal is provided until the first delayed reclosing position is reached.

However, if the "RI" contact is closed when the breaker is initially tripped, then CX is picked up at once. CX in turn picks up the C unit which causes the stepping switch to make one instantaneous step (see GEK-1269 for description) and sets up the breaker closing circuit. The CX contact, studs 11 and 20 (see Fig. 2), keeps the timing capacitor discharged until the breaker closes to drop out the CX relay unit. When the CX unit drops out, it opens the breaker closing circuit and, therefore, the relay is pump free at all times.

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.

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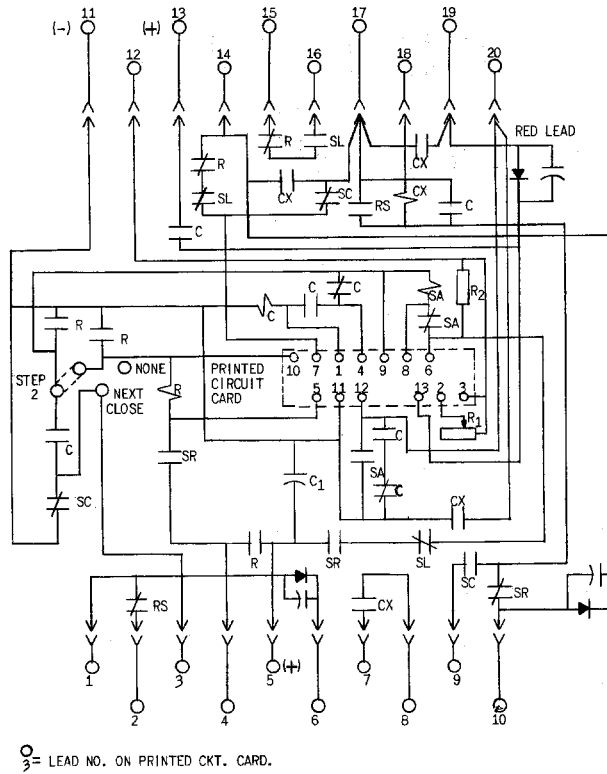


Fig. 1A (203A8676 Sh. 1) Internal Connections For Relay Type NLR11E

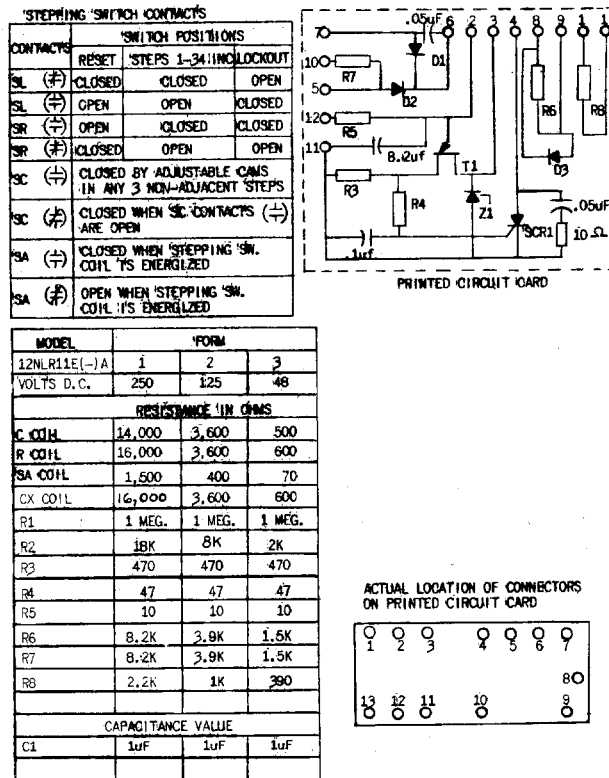
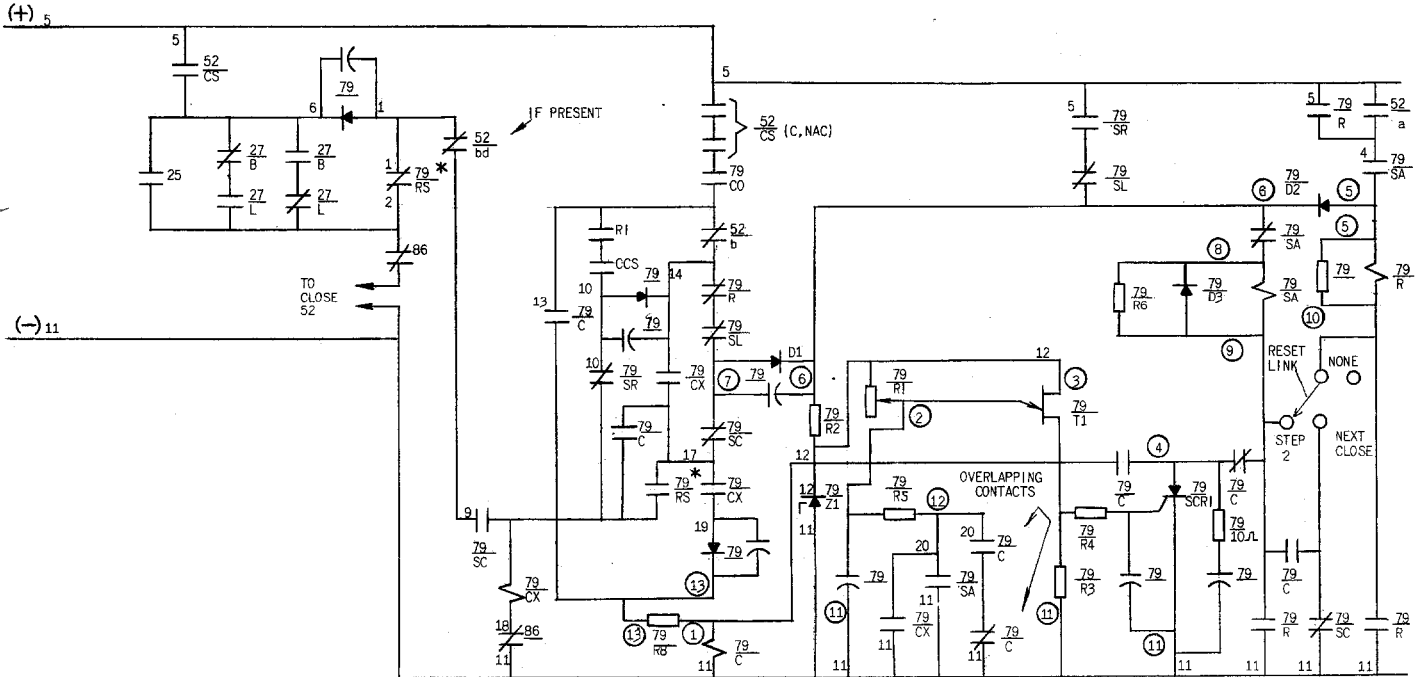


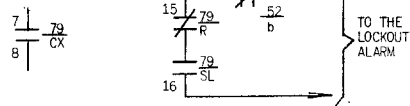
Fig. 1B (203A8676 Sh. 2) Internal Connections For Relay Type NLR11E



NOTE: SEE SHEET ONE FOR DESCRIPTION OF NLR OPERATION AND CONTROL SWITCH.

* RS CONTACTS ARE SET TO CHANGE POSITION ON SECOND STEP.

② NO'S IN CIRCLES REPRESENT TERMINALS ON PRINTED CIRCUIT CARD.



LEGEND			
DEVICE NO.	TYPE	INC. ELEM.	DESCRIPTION *
R1			SELECTIVE RECLOSING
25	IJS		SYNCHRONISM CHECK RELAY
27 B	NGV		VOLTAGE RELAY BUS
27 L	NGV		VOLTAGE RELAY LINE
52			CIRCUIT BREAKER
52 CS	SB-1		CIRCUIT BREAKER CONTROL SWITCH
79	NLR		RECLOSING RELAY
		C	CLOSING UNIT
		CX	HOLDING UNIT FOR TIMER
		R	RESETTING UNIT
		RS	CAM OPER. AUX. - FUNCTION SW.
		SA	ARMATURE OF STEPPING SW.
		SC	CLOSING CONTS. OF STEPPING SW.
		SL	LOCKOUT CONTS. OF STEPPING SW.
		SR	RESETTING CONTS. OF STEPPING SW.
79 CO	SB-1		OUTOUT SWITCH
86	HEA		LOCKOUT RELAY
CCS	SB-1		CARRIER OUTOUT SWITCH
DESCR. OF DEVICE		INT. CONN.	OUTLINE
12NLR11E-1A		0203A8676	K-6208272

Fig. 2 (0116B6934 Sh. 7) Typical External Connections For The NLR11E Relay.

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