RECLOSING RELAY
NLR21B

INTRODUCTION

This supplement in addition to GEK-34123 constitutes the instructions for the NLR21B type relay.

DESCRIPTION

Relay NLR21B is similar to relay NLR21A in the insert booklet GEK-34123 except it is an AC operated relay. The relay contains a bridge rectifier to rectify the AC input. The internal and external connections diagram are shown in Figures 1 and 2 respectively in this supplement. For APPLICATION AND SETTINGS refer to the sections in the attached booklet.

RATINGS

The relay has standard ratings of 120 and 240 volts AC.

BURDENS

The AC burden of the NLR21B is at unity power factor as given in Table Below

VOLTS	FREQUENCY	RESISTANCE-OHMS MINIMUM
240	60 HZ	1500
120	60 HZ	400

ACCEPTANCE TESTS

Apply AC power to studs 5 and 6 instead of DC power to studs 13 and 11. See internal connections Figure 1.

INSTALLATION PROCEDURE

Connections are to be made per attached Field Test Connections (Figure 3).

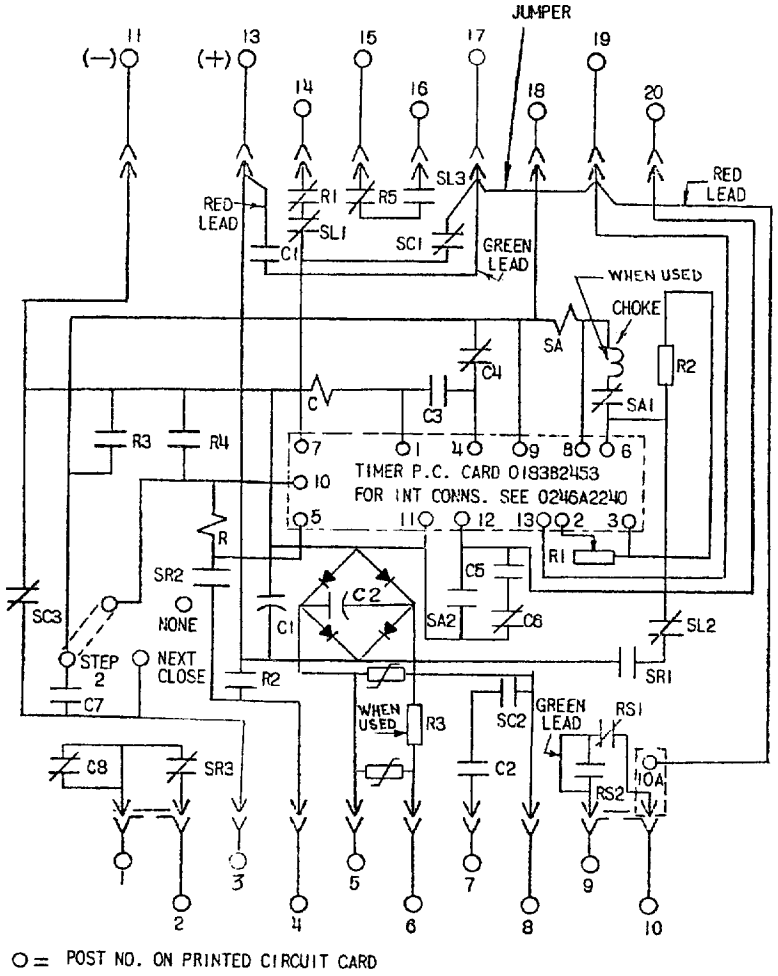

FIG. 1 (0246A3327-3 SH. 1) TYPE NLR21B RELAY INTERNAL CONNECTIONS DIAGRAM

STEPPING SWITCH CONTACTS

CONTACTS	SWITCH CONTACTS		
	RESET	STEPS 1-34 INC.	LOCKOUT
SL (⊀)	CLOSED	CLOSED	OPEN
SL (⊥)	OPEN	OPEN	CLOSED
SR (⊥)	OPEN	CLOSED	CLOSED
SR (⊀)	CLOSED	OPEN	OPEN
SC (⊥)	CLOSED BY ADJUSTABLE CAMS IN ANY 3 NON-ADJACENT STEPS		
SC (⊀)	CLOSED WHEN SC CONTACTS (⊥) ARE OPEN		
SA (⊥)	CLOSED WHEN STEPPING SW. COIL IS ENERGIZED		
SA (⊀)	OPEN WHEN STEPPING SW. COIL IS ENERGIZED		

MODEL	FORM			
12NLR21B(-)A	1	2	3	4
12NLR21D(-)A	1	2		
VOLTS AC	120	240	240	208
RESISTANCE IN OHMS				
C COIL	5,000	21,000	21,000	21,000
R COIL	6,500	28,500	28,500	28,500
SA COIL	400	1,500	1,500	1,500
R1	1 MEG.	1MEG.	1MEG.	1MEG.
R2	10,000	20,000	20,000	20,000
R3		100	100	250
CHOKE		3	3	3
CAPACITANCE VALUE				
C1	7uf	2uf	2uf	2uf

FIG. 1A (0246A3327-1 SH. 2) TYPE NLR21B RELAY INTERNAL CONNECTIONS DIAGRAM

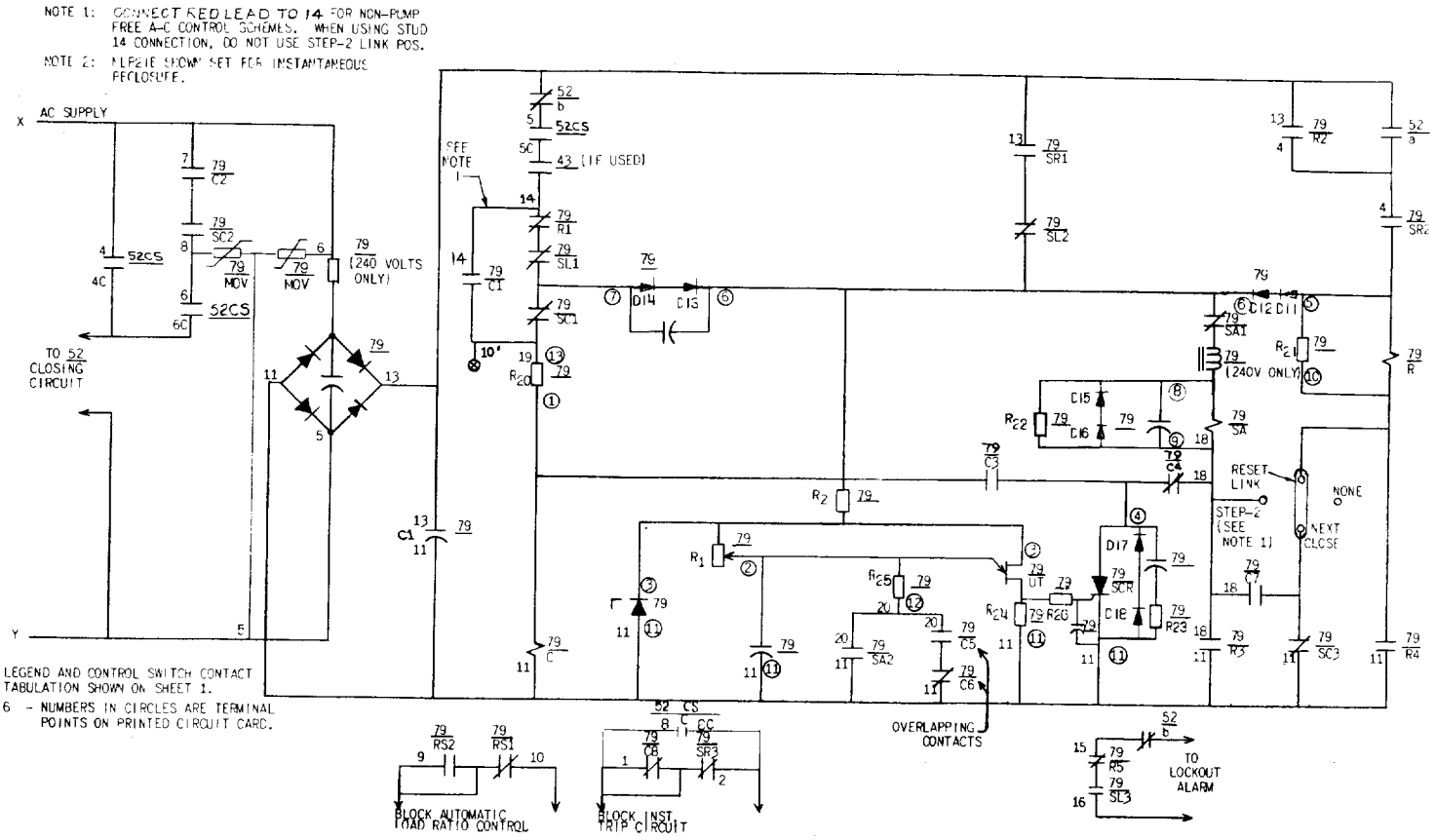

FIG. 2 (0165B2632-2 SH. 1) TYPE NLR21B RELAY EXTERNAL CONNECTIONS DIAGRAM

CAM OPERATED CONTACTS	RESET STEP #0	STEPS 1-34	LOCKOUT STEP 35
SL ⊣⊢			X
SR ⊣/⊢	X		
SR ⊣⊢		X	X
SL ⊣/⊢	X	X	
SC ⊣/⊢	X, ANY 3 NON-ADJACENT STEPS		
SC ⊣⊢	OPEN WHEN SC ⊣/⊢ IS X		
RS ⊣/⊢	X IN ANY 4 ADJACENT STEPS		
RS ⊣⊢	OPEN WHEN RS ⊣/⊢ IS X		

LEGEND			
DEVICE NO.	TYPE	INCL. ELEM.	DESCRIPTION
52CS	SB		CONTROL SWITCH
52			AC CIRCUIT BREAKER
79	NLR		AC RECLOSING RELAY
		C	CLOSING UNIT
		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.

BREAKER CONTROL SWITCH MODEL 16SB1DD920 ST52P
W/ESCU 6402870-G2 W/KP - 78848 - G

CONTACT NUMBER		CLOSE	NORMAL AFTER CLOSE	NORMAL AFTER TRIP	TRIP
1 2	1				
	2				
3 4	3		X	X	
	4	X			
5 6	5	X	X		
	6	X	X		
7 8	7		X	X	
	8	X			

DESCR. OF DEVICE	INT. CONNS.	OUTLINE
NLR 21B & NLR21D	0216A3367	K-6209672

⑥ - NUMBERS IN CIRCLES ARE TERMINAL POINTS ON PRINTED CIRCUIT CARD.

NUMBERS ON CONTACTS (79/R1, 79/SC1, ETC) ARE ARBITRARILY ASSIGNED FOR IDENTIFICATION PURPOSES.

FIG. 2A (0165B2632-2 SH. 2) TYPE NLR21B RELAY INTERNAL CONNECTIONS DIAGRAM

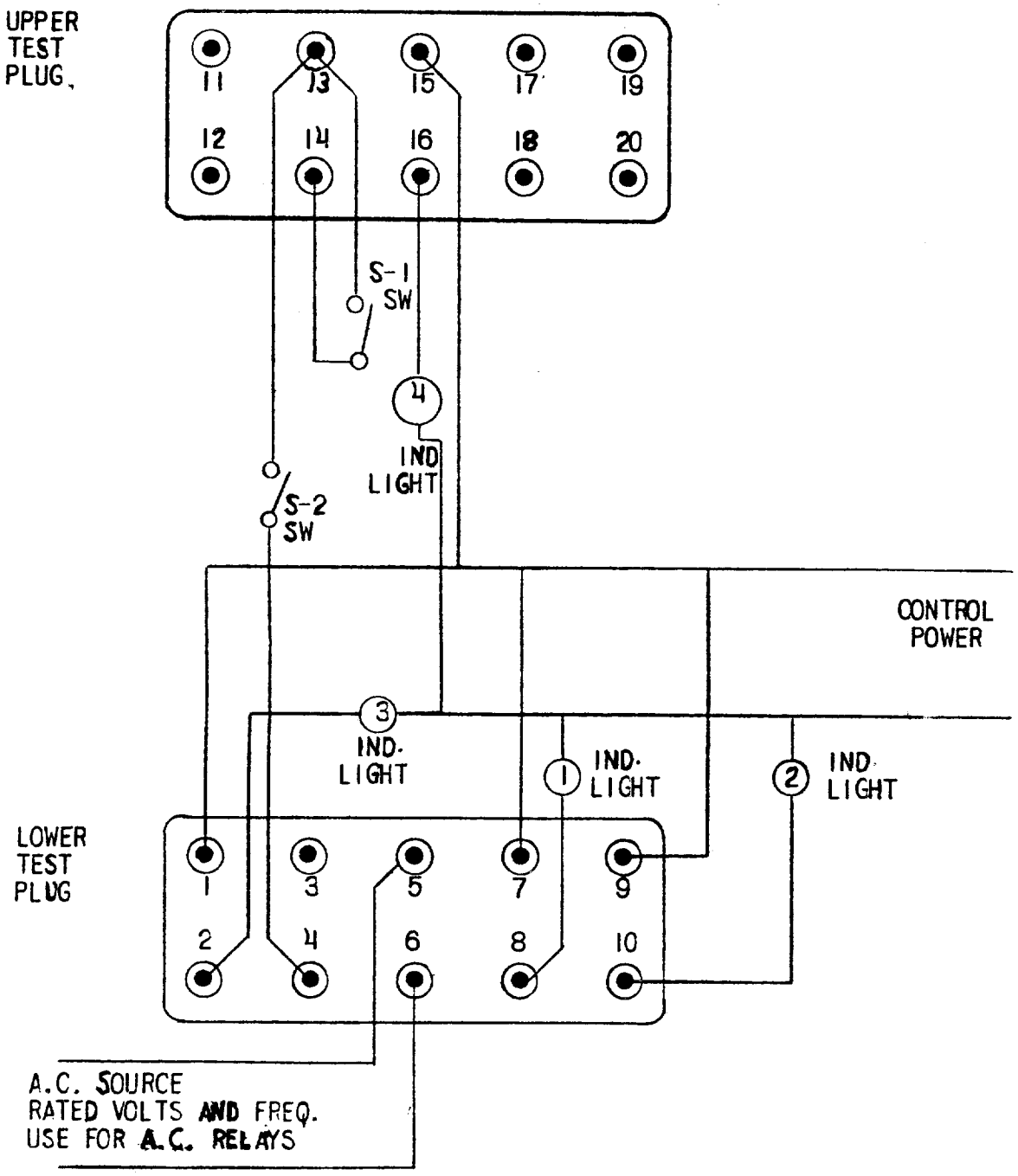

FIG. 3 (-246A6856-0) Type NLR21B Relay Field Test Connections