



INSTRUCTIONS

GEK- 34146
Insert Booklet- GEK-34123

RECLOSING RELAY NLR21D

INTRODUCTION

This supplement in addition to GEK-34123 constitutes the instructions for the NLR21D type relay.

DESCRIPTION

Relay NLR21D is similar to relay NLR21A except for the following:

1. Relay NLR21D is an AC operated relay. The relay contains a bridge rectifier to rectify the AC input. See internal Figure 1.
2. There is a fixed cam lobe attached to the indicating dial (of the stepping switch) located in the zero position to provide instantaneous reclosing. There are also adjustable cam lobes for delayed reclosure.

The external connections diagram is shown in Figure 2 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 NLR21D is at unity power factor as given in Table

TABLE
BURDENS

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).

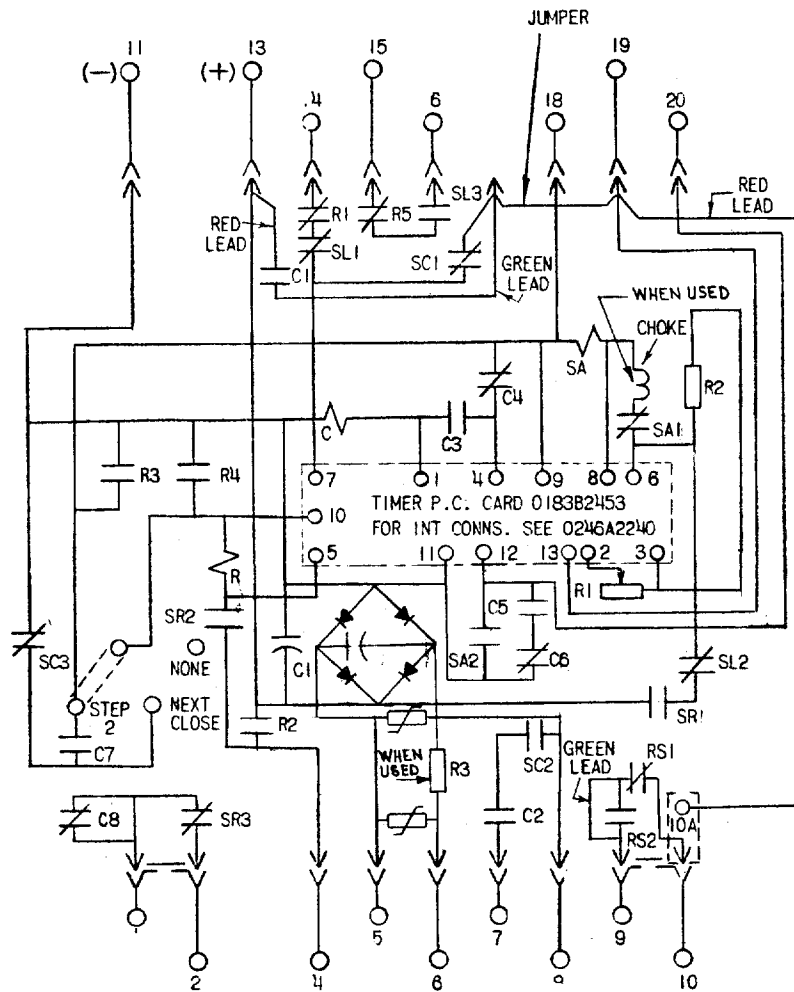
These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently 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.

POWER SYSTEMS MANAGEMENT DEPARTMENT

GENERAL ELECTRIC

PHILADELPHIA, PA.



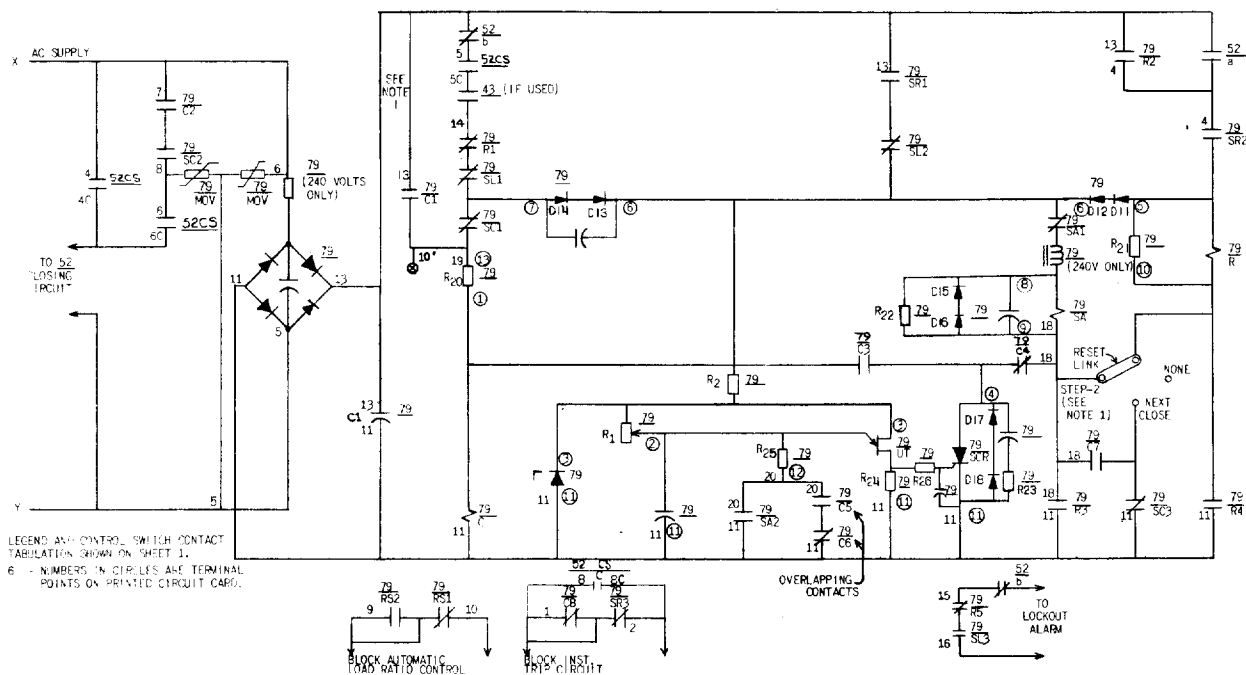
O = POST NO. ON PRINTED CIRCUIT CARD

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. 1 (0246A3327-1 SH. 1&2) Type NLR21D Relay Internal Connections Diagram



OPERATED CONTACTS	RESET STEP #0	STEPS 1-34	LOCKOUT STEP 35
SL			X
SR	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		

DEVICE NO.	TYPE	INCL. ELEM.	DESCRIPTION
S2CS	SH		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 165B100020 STSP			
NLR21D 165B100020-02				NLR21D 165B100020-02			
CONTACT NUMBER	CLOSE	NORMAL AFTER CLOSE	NORMAL AFTER TRIP	TRIP			
1	1						
2	2						
3	3						
4	4						
5	5						
6	6						
7	7						
8	8						
9	9						
10	10						
11	11						
12	12						
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98	98						
99	99						
100	100						

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. 2 (0165B2632-1 SH. 1&2) Type NLR21D Relay External Connections Diagram

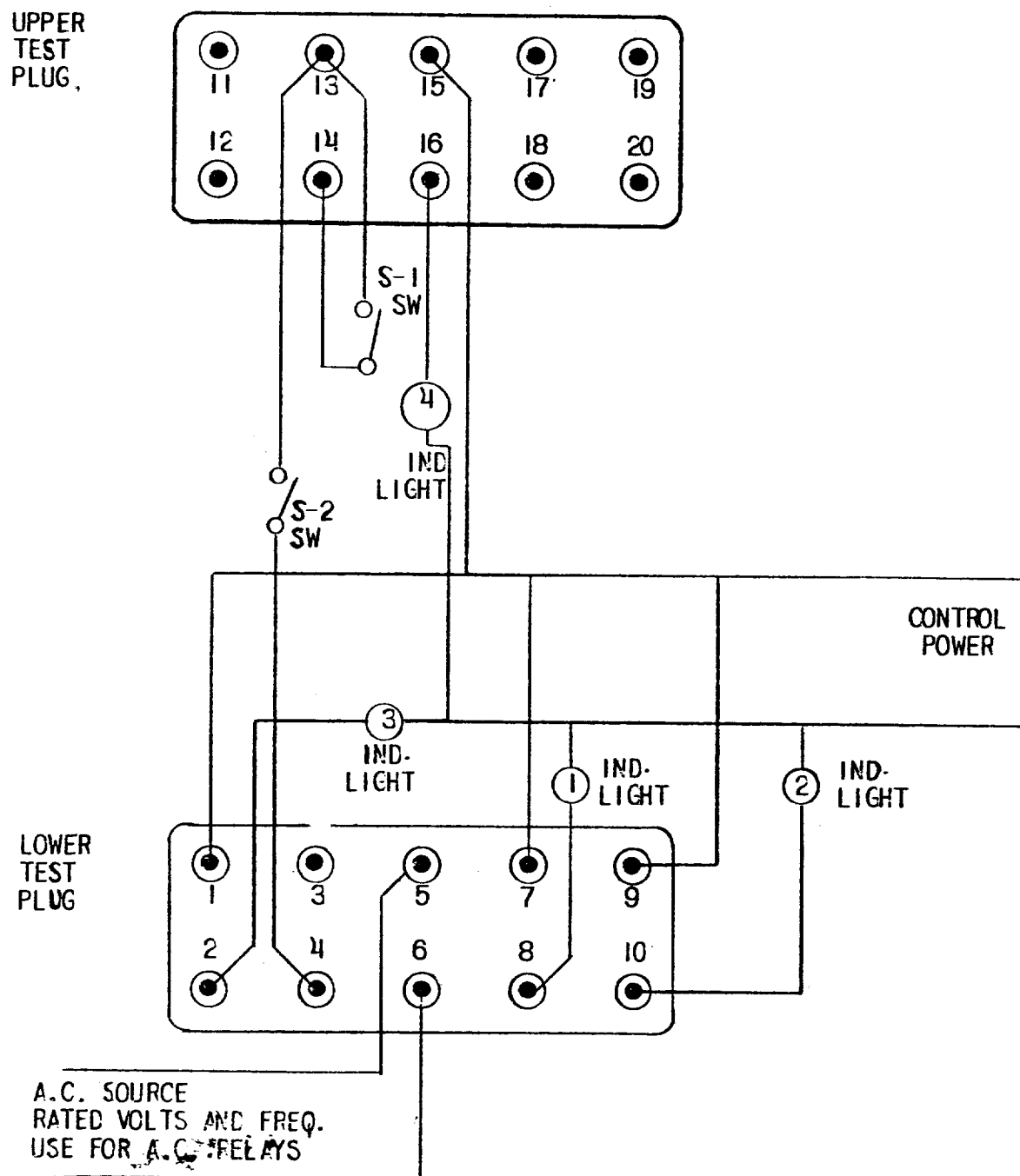


FIG. 3 (0246A6856-0) Type NLR21D Relay Field Test Connections