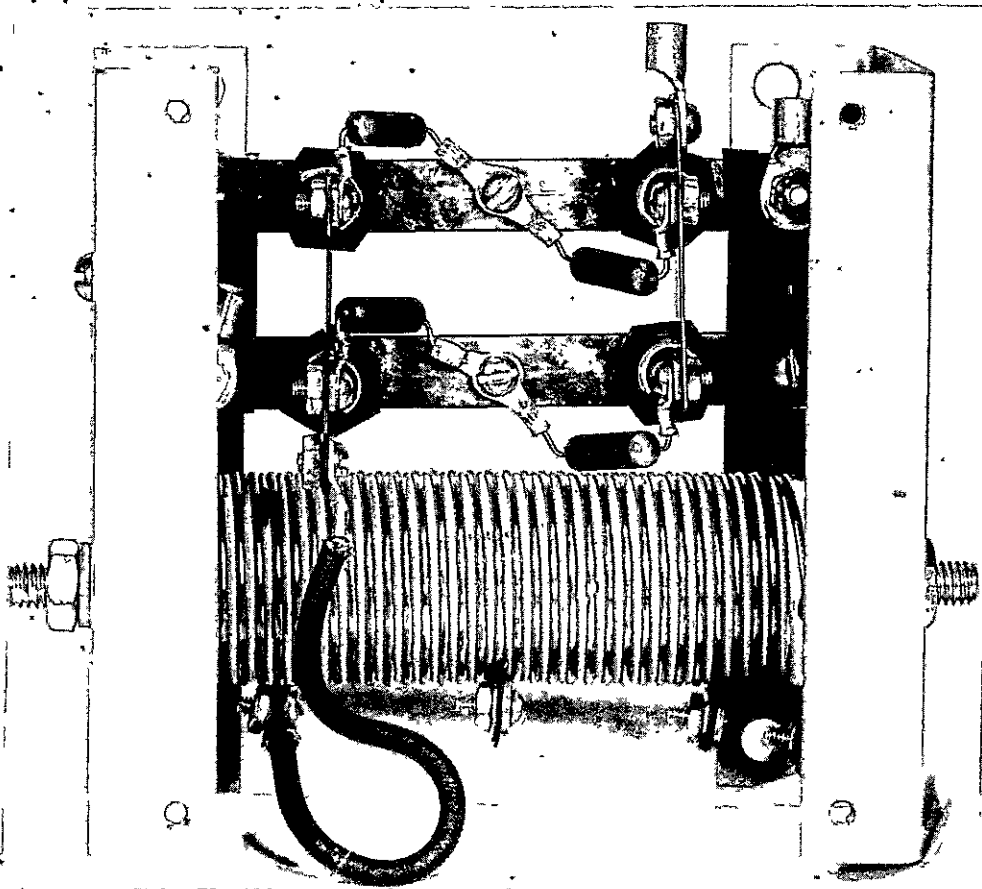




**INSTRUCTIONS  
AND  
RENEWAL PARTS**

GEI-77007A

# **SILICON RECTIFIERS FOR CIRCUIT BREAKER CLOSING SERVICE**



**MEDIUM VOLTAGE SWITCHGEAR DEPARTMENT**

**GENERAL  ELECTRIC**

**PHILADELPHIA, PA.**

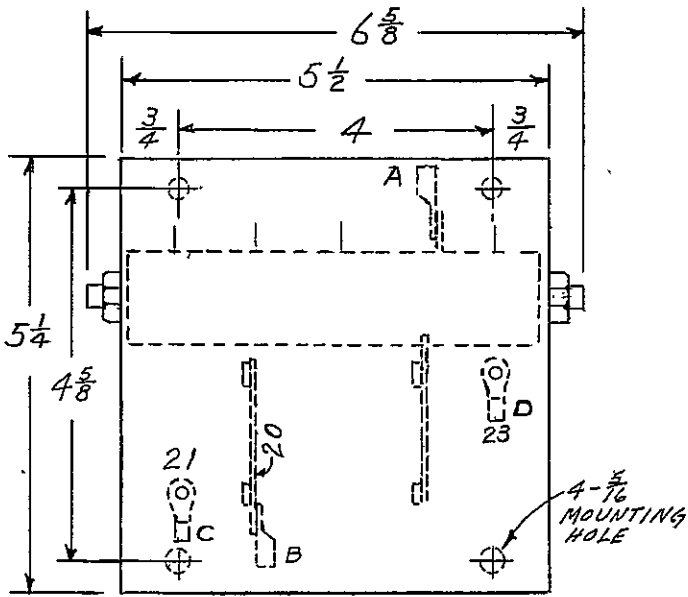


Fig. 1 Schematic of Rectifier Assembly

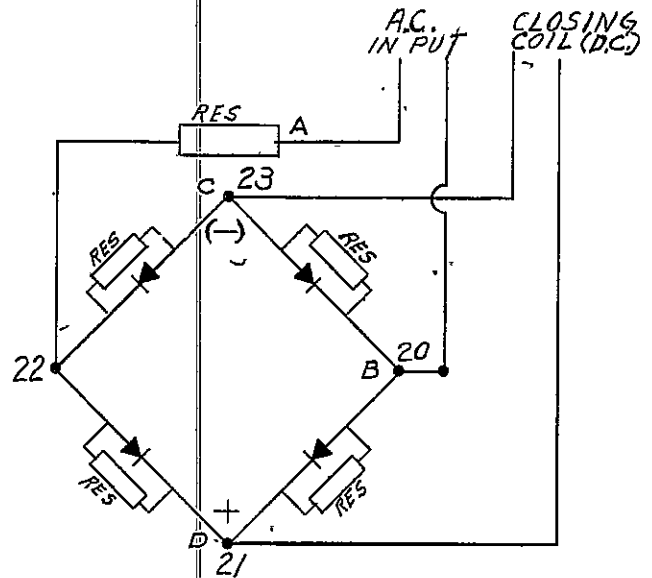


Fig. 2 Rectifier Wiring Diagram

Breaker	Closing Coil	Closing Coil Resistance Ohms ± 10% at 25°C	Rectifier Silicon	Resistor Setting In Ohms
4.16-75-0	6306734 G-2	2.00	(2) 4JA36BX16 & (2) 4JA37BX16	2.0
4.16-150	6375521 G-6	1.58		1.25
4.16-250	6375521 G-2	0.93		.75
4.16-350	6375522 G-2	0.513		.375
7.2-250	6375521 G-2	0.93		.75
7.2-500	6375522 G-2	0.513		.625
13.8-250	6375521 G-6	1.58		1.25
13.8-500	6375521 G-2	0.93		.75
13.8-750	6375522 G-2	0.513		.625
13.8-1000		Stored Energy		
FK-33	3128949	5.90		4.0
FK-142	3192508	4.53		4.0
FK-143	3192507	2.39		4.0
FK-255-20	6275005 G-4	2.25	2.75	
FK-255-28	6275006 G-13	1.25	1.75	

Fig. 3

Fig. 1 (898B887)

Fig. 2 (898B887)

Cover (8026940)

# SILICON RECTIFIERS FOR CIRCUIT BREAKER CLOSING SERVICE

## INTRODUCTION

Silicon rectifier assemblies for circuit breaker closing service are made up of one or more full wave rectifier units and several resistors. The 4JA36BX16 and 4JA37BX16 rectifiers are designed for

intermittent duty and should only be used on the specific circuit application where their characteristics apply. (See Fig. 3) These rectifiers, colored blue with a hex-flanged base, are of the button type and

are hermetically sealed units. When the rectifiers are used outdoors, they should be installed in a weatherproof housing. For indoor use they should be installed in a suitable enclosure.

## DESCRIPTION

The silicon rectifier unit assembly for closing service consists of two half wave forward polarity rectifiers and two half wave reversed polarity rectifiers, four 470

ohm one watt resistors and one 2 ohm or one 4 ohm power resistor, all mounted inside a metal box. Fig. 1 shows a schematic view of the rectifier assembly with the physical

positions denoted to correspond to the positions shown on the rectifier wiring diagram Fig. 2. For each breaker closing service one rectifier box assembly is required.

## ADJUSTMENTS

**DO NOT MAINTAIN VOLTAGE ON THE RECTIFIER ANY LONGER THAN IT TAKES TO ELECTRICALLY CLOSE THE BREAKER (20 CYCLES MAXIMUM) OR SERIOUS DAMAGE TO THE RECTIFIER MAY**

**RESULT.** For specific breaker application, reference should be made to Fig. 3 and resistor taps Fig. 4 & 5. When the resistance value has been selected and the proper connection made no additional

adjustments to the rectifier unit assembly should be made. These units have been tested at the factory and unlike rectifiers of previous design are affected very little by ambient temperature changes.

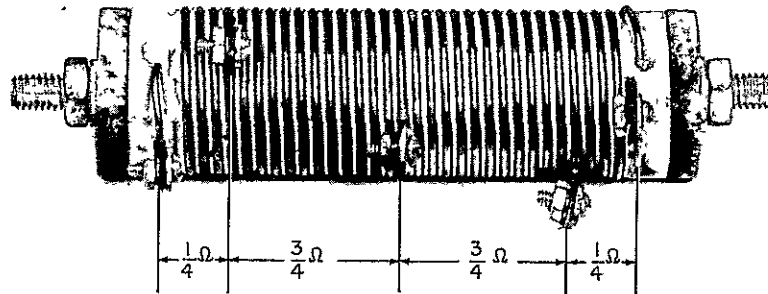


Fig. 4 2 Ohm Resistor

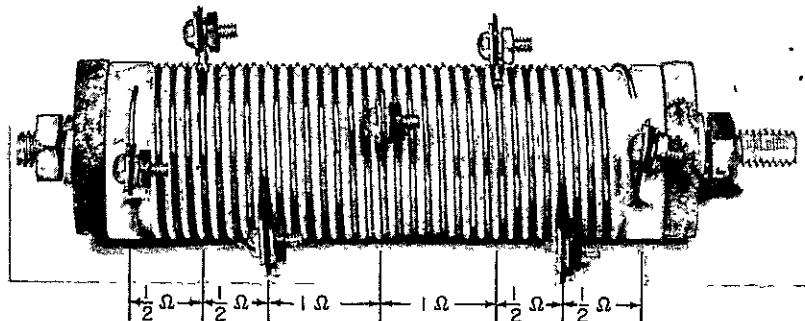


Fig. 5 4 Ohm Resistor

*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.*

## RENEWAL PARTS

It is recommended that sufficient renewal parts be carried in stock to enable the prompt replacement of any worn, broken, or damaged parts. A stock of such parts minimizes service interruptions caused by breakdowns, and saves time and expense.

When continuous operation is a primary consideration, more renewal parts should be carried, the amount depending upon the severity of the service and the time required to secure replacements.

Renewal parts which are furnished may not be identical to the original parts, since improvements are made from time to time. The parts which are furnished, however, will be interchangeable.

### ORDERING INSTRUCTIONS

1. ALWAYS SPECIFY THE COMPLETE NAMEPLATE DATA OF THE RECTIFIER BOX ASSEMBLY.
2. SPECIFY THE QUANTITY, CATALOG NUMBER (IF LISTED), REFERENCE NUMBER (IF LISTED), AND DESCRIPTION OF EACH PART ORDERED, AND THIS BULLETIN NUMBER.
3. STANDARD HARDWARE, SUCH AS SCREWS, BOLTS, NUTS, WASHERS, ETC., IS NOT LISTED IN THIS BULLETIN. SUCH ITEMS SHOULD BE PURCHASED LOCALLY.
4. FOR PRICES, REFER TO THE NEAREST OFFICE OF THE GENERAL ELECTRIC COMPANY.

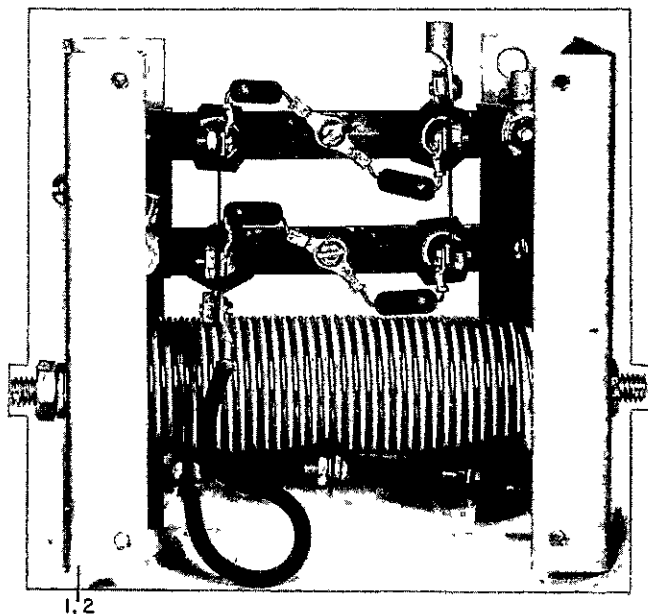


Fig. 6

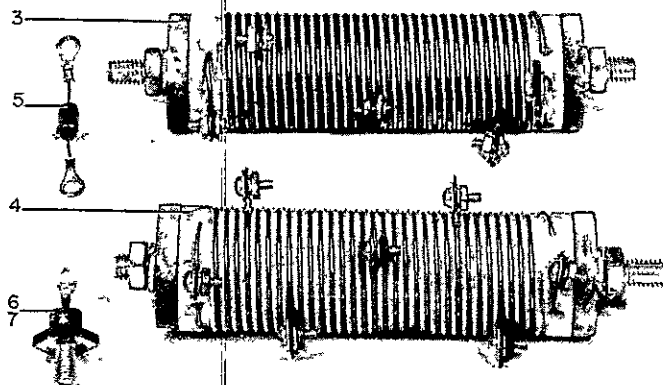


Fig. 7

NO.	DRAWING NUMBER	FIG.	QUAN./BOX	DESCRIPTION
1	832C498 G-1	6	1	Rectifier Box Assembly With a 2 Ω Resistor and Cover
2	832C498 G-3	6	1	Rectifier Box Assembly With a 4 Ω Resistor and Cover
3	832C498 P-13	7	1	2 Ω Power Resistor
4	832C498 P-14	7	1	4 Ω Power Resistor
5	832C498 P-12	7	4	470 Ω 1 Watt Resistor
6	4JA36BX16	7	2	Rectifier - Forward Polarity
7	4JA37BX16	7	2	Rectifier - Reverse Polarity

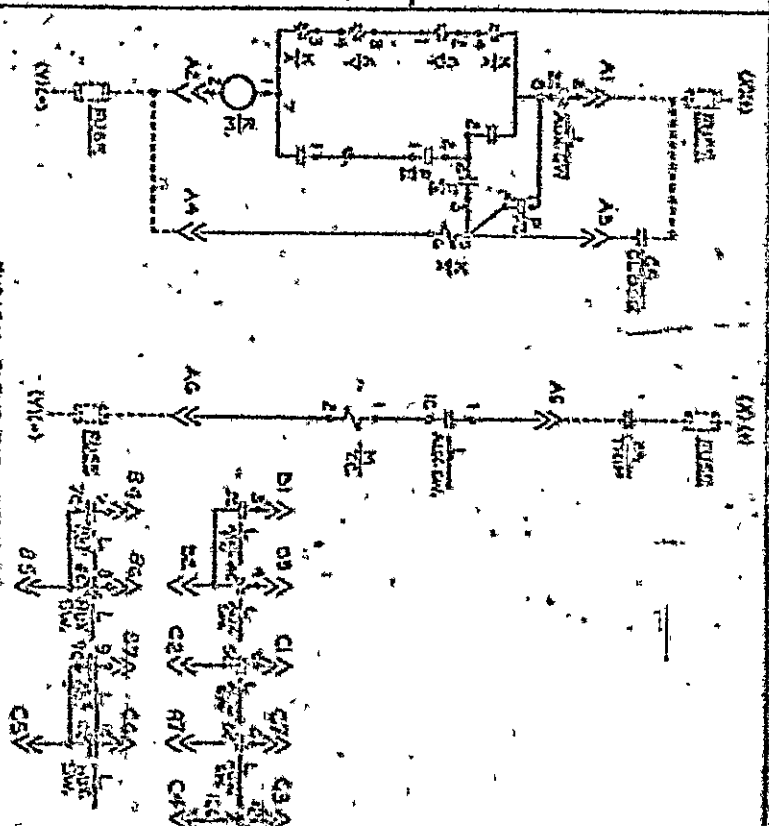
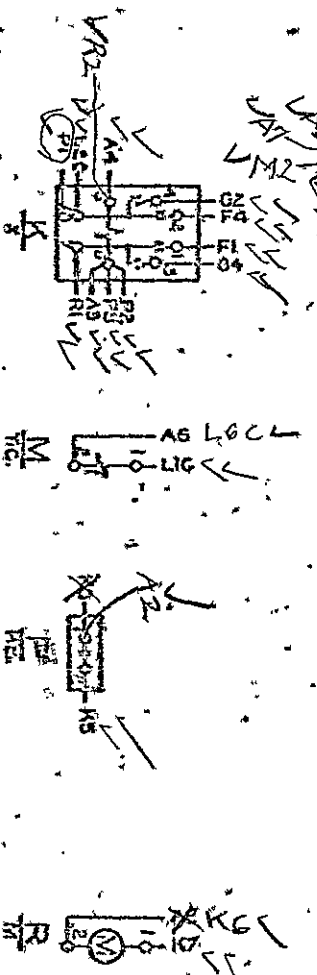
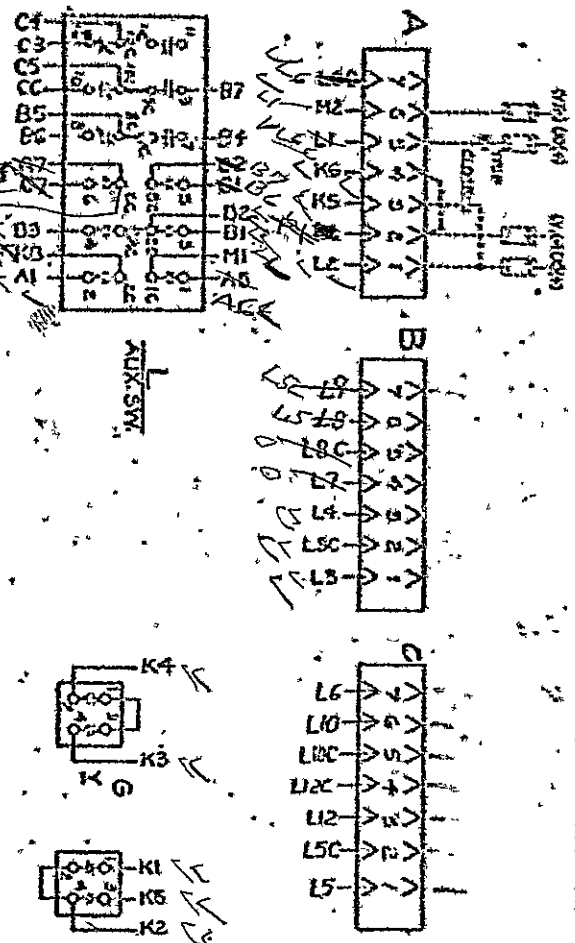
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NOTES  
 1. SW. POSITION IN OPEN POSITION WITH SPRING DISCHARGED

2. ALL ELECTRICAL CONNECTIONS TO BE MADE IN ACCORDANCE WITH THE WIRING DIAGRAM

17712400

GENERAL ELECTRIC  
 CONN. & ELEM. DIAG.



TYPICAL ELEMENTARY WIRING

- LIST OF ABBREVIATIONS
- A-DEC DISC AT TOP LEFT
  - B-DEC DISC AT TOP CENTER
  - C-DEC DISC AT TOP RIGHT
  - F } CUT OFF SWITCHES (V, Z)
  - K-CLOSING RELAY (TYPE PS&IX)
  - L-AUX SW. "A" & "B" CONTACTS
  - M-TRIP TRIP (T, C)
  - P-TRIP BUTTON CLOSING SW
  - ON ONR (P, B)
  - R-CLOSING SPRING CHARGING MOTOR (H)

CONNECTION DIAGRAM-FRONT VIEW

CHANGE  
 DONE

