GFELLER LINE CONCENTRATOR 49-11+1-2

SCHEMATICS

1. GENERAL

1.01 This is one of a group of sections pertaining to the Gfeller line concentrator. This section contains the schematics S11888 and S11889 for model 49-11+1-2, submitted by the Gfeller Company and an explanation of the symbols and drawing methods used.

1.02 The Gfeller concentrator schematics are of the detached contact type similar to those now is use in the Bell System.

1.03 Arrowheads, bearing no designation, are used to indicate a tie-in between two points of the circuit which are separated on the same sheet. The connection of the two points may be found by following the direction of the arrowhead, in a straight line to its associated arrowhead (Fig. 2).

1.04 Resistor strapping with an X on the strap, as indicated on R2, R5, R11, R13, R18 of S11888 and R1 of S11889 is used to indicate strap removal when 60-volt operation is used (Fig. 2). 60-volt operation is no longer used in the Bell System; it has been replaced with 72-volts to extend the dc range of the line concentrator. When 72-volt operation is used, strap removal on resistors R11 of S11888 and R1 of S11889 is required.

1.05 Fuses are represented by an oval-shaped symbol (Fig. 2). The contacts shown above

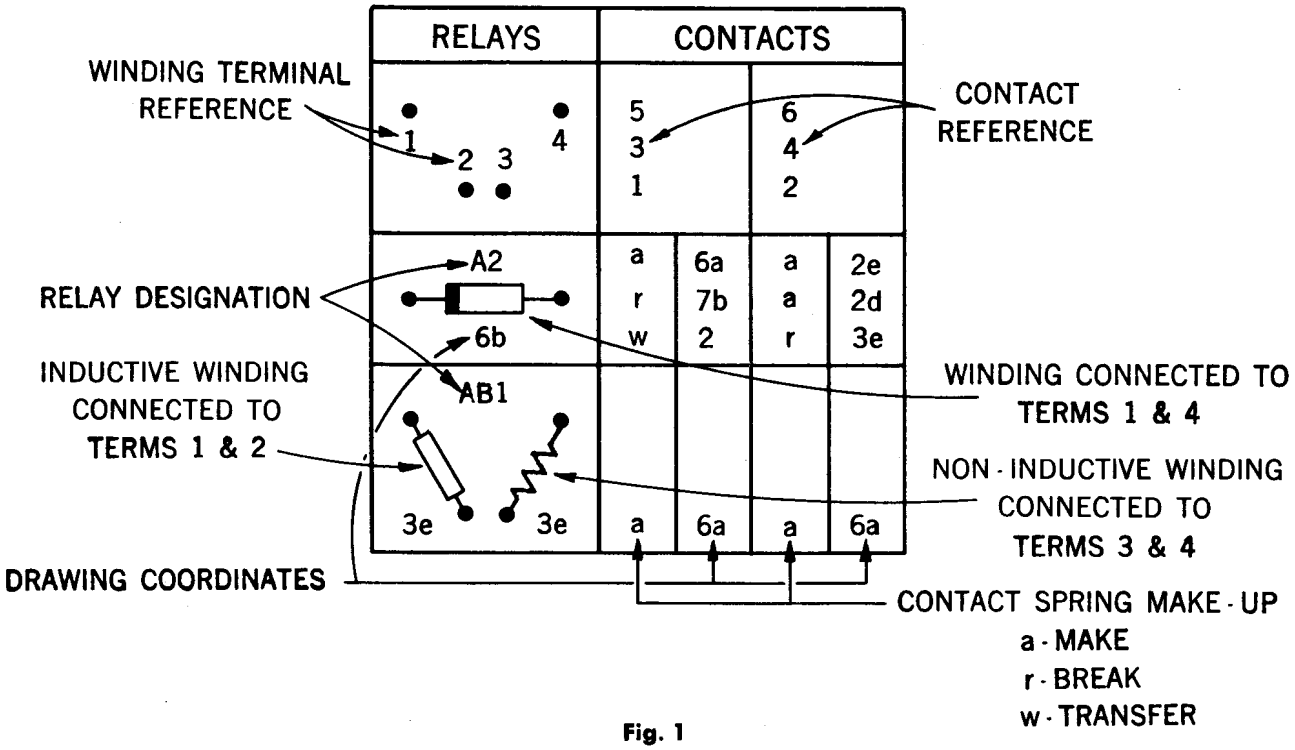


Fig. 1

each symbol are the fuse alarm contacts. Each fuse is designated by the equipment to which it supplies power as well as by a number; this number is also associated with arrowheads at the various components of the central office unit to indicate the source of the battery supply.

1.06 The Gfeller switch vertical bars are drawn in a vertical plane and numbered BES, and 1 through 11. Vertical BES is in the central office unit only. The horizontal bars are drawn in a horizontal plane and numbered 1 through 49. The horizontal bar designated 50 is a test bar associated only with the central office unit switch. The a, b, and c, designations are the European equivalent of the Bell System T, R, and S, respectively. (Fig. 3.)

1.07 The tables at the bottom of the schematics give the location of each relay winding terminal and its associated contacts by drawing coordinates. The contact spring make-up is also shown. Part of a table is shown in Fig. 1 with a labeled description.

1.08 Fig. 2 contains a list of designated symbols as used in the schematics.

1.09 Fig. 3 shows the schematic for the Gfeller switch for the central office and remote unit.

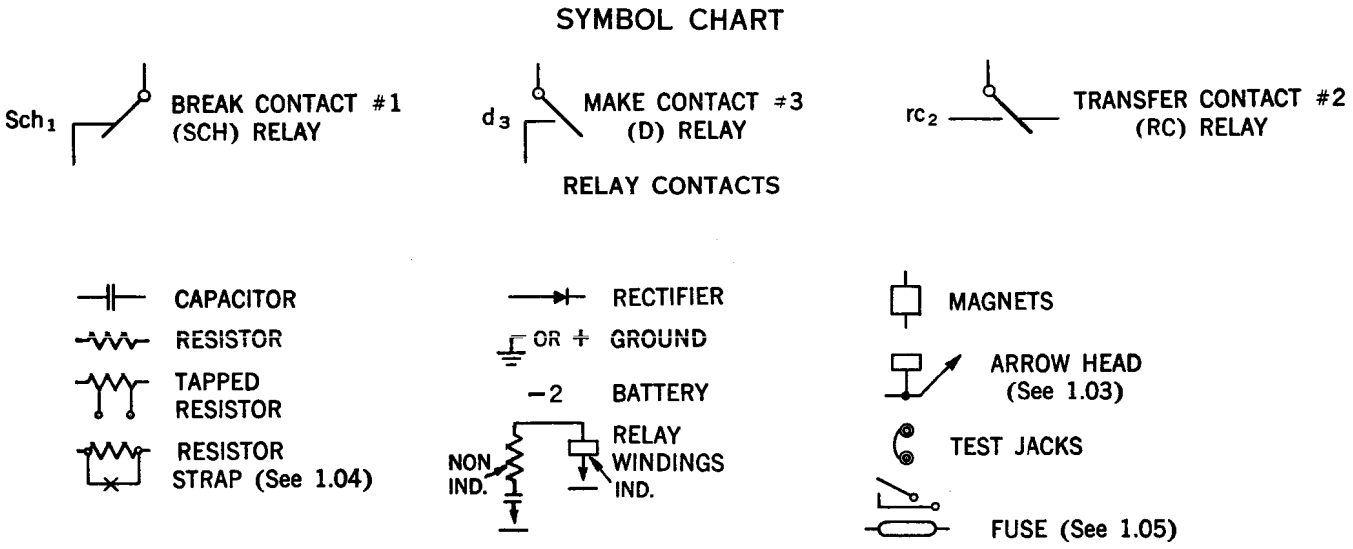
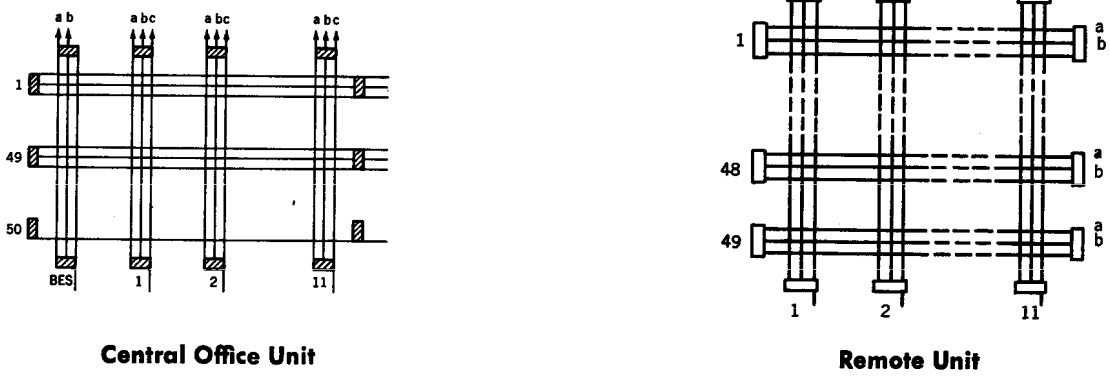
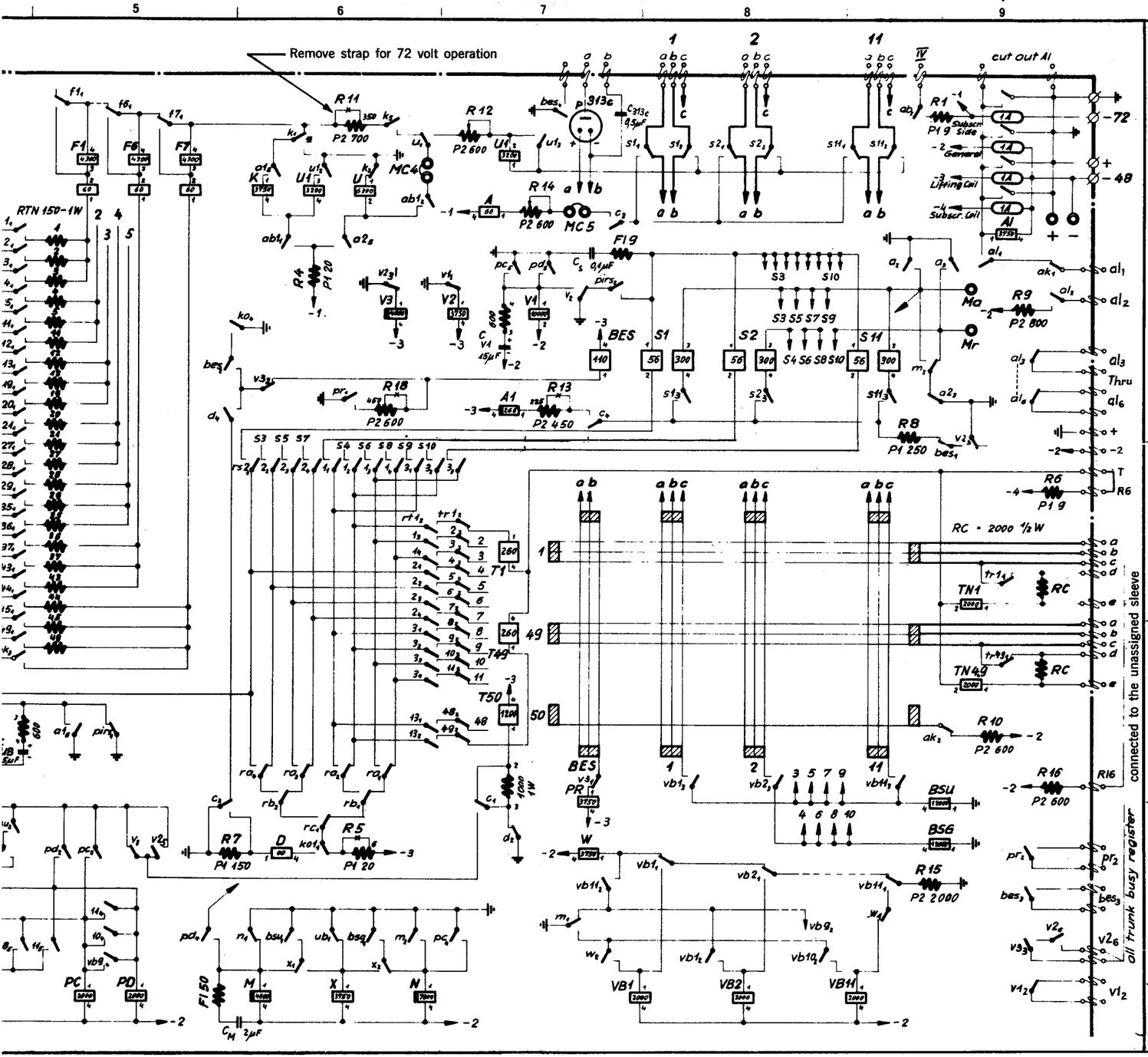


Fig. 2



Central Office Unit **Remote Unit**

Fig. 3



Relays	Contacts	BSU	F5	G5	M	PIRT
01 40 02 30	1 2 3 4 6 5 4 2	9C	w r 2F r 3F	r 3F r 1F r	6B a 6C w 7C w 9F	2D. w 2C r 3F
A 7G	a 9F r 1C a 9F	C 2B 2C	F6 5G w 5G r 3F r 3F	G6 r 3F r 2F r	N 6B r 6C	PR 7D a 6F a 9C
A1 7F	a 8G a 5D a 3D a 1C w 3E a 2D	D 6C	a 2D a 5F w 2C r 7C	F7 5G r 2F r 3F w 5G r 3F	G7 4G r 2F r 1F r 3F r 4G	PA 3B r 1F	RA 1G a 1F w 6D w 6D w 6D w 6D
A2 3C	a 6G a 2C r 9F a 2D w 2E r 2C	F1 5G w 5G	r r r 2G	G1 4G r 1G r 4G	G8 4G r r	PB 4B r 2F	RB 2G a 2F w 6C w 6C
AB 2B	a 2C a 9G	F2 w	r 3G	G2 r 2G r	K 6G a 6G w 6G r 3C r 6G r 3D r 6G	PC 5B a 7F a 1D r 3F a 7C a 5C	RC 3G a 3F w 6C w 1E
AB1 2B 3C	a 6G a 6G	F3 w	r 2F r 3F	G3 r 2F r 1F r	KO 2B r 1F r 3D a 6F r 2F	PD 5B a 7F a 2D r 2F a 5C	RD 2G a 2F w 2E w 9E w 3E
BSG 9C	a 6C a 4C	F4 w	r 3F	G4 r 3F r	KO1 2B r 2C r 2F w 6C r 1C r 2F	PIRS 2D a 2C r 5D a 7F	RE 2G a 3F w 3E w 2E

RF 3G	w 2E a 4F	RT4-11	V 3D	VB4	VB11 9B
RS1 1D	a 6E a 6E a 6E a 6E	RT12 3D	V1 7F 3YF a 1C r 7F a 3D r 9B	VB5	W 7C r 9C a 7C
RS2 2D	a 6E a 6E a 6E a 6E	RT13 3D	V2 7F a 5C w 4C a 9C w 3G w 4C	VB6	X 6B w 3D w 6C w 6C
RS3 2D	a 7E a 6E a 6E	SCH 1E a 3D w 1E w 3D w 1D	V3 6F a 9C r 7D r 6F	VB7 a 4C	AI 9G a 9F a 9F a 9F a 9F
RT1 2D	a 6E a 6E	U 6G 3B w 6G	VB1 7B a 8D w 8C a 8C	VB8 a 4C	
RT2 2D	a 6E a 6E a 6E a 6E	U1 7G 6G w 3C a 6G	VB2 8B a 8D w 8C a	VB9	
RT3 2D	a 6D a 6D a 6D a 6D	UB 4D 4D r 6C r 1C	VB3	VB10 a 4C	AK r 4D r 9F r 9D

Lifting Coil	Contacts	Subscr. Coil		Subscr. Relays	Cont.
1 2 3 4	6 3 1 4 2 5	01 40 02 30		20 10	3 4
BES 7F	a 9C r 9E a 7G a 5F	T1 7B		TN1 9E	a 4G
S1 8F 8F	a 8F w 8G a 8F w 8G	T49 7D		TN49 9D	a 4D
S2 8F 8F	a 8F w 8G a 8F w 8G	T50 7D			
S11 9F 9F	a 9F w 9G a 9F w 9G	Discon. rod	7C&8C Cont. 3 4		
		tr 1	r 7E r 9E		
		tr 49	r 7D r 9D		

Relays and coils seen from wiring side

GFELLER LINE CONCENTRATOR CENTRAL OFFICE UNIT

S 11888

49-11+1-2

Remove strap for 72 volt operation

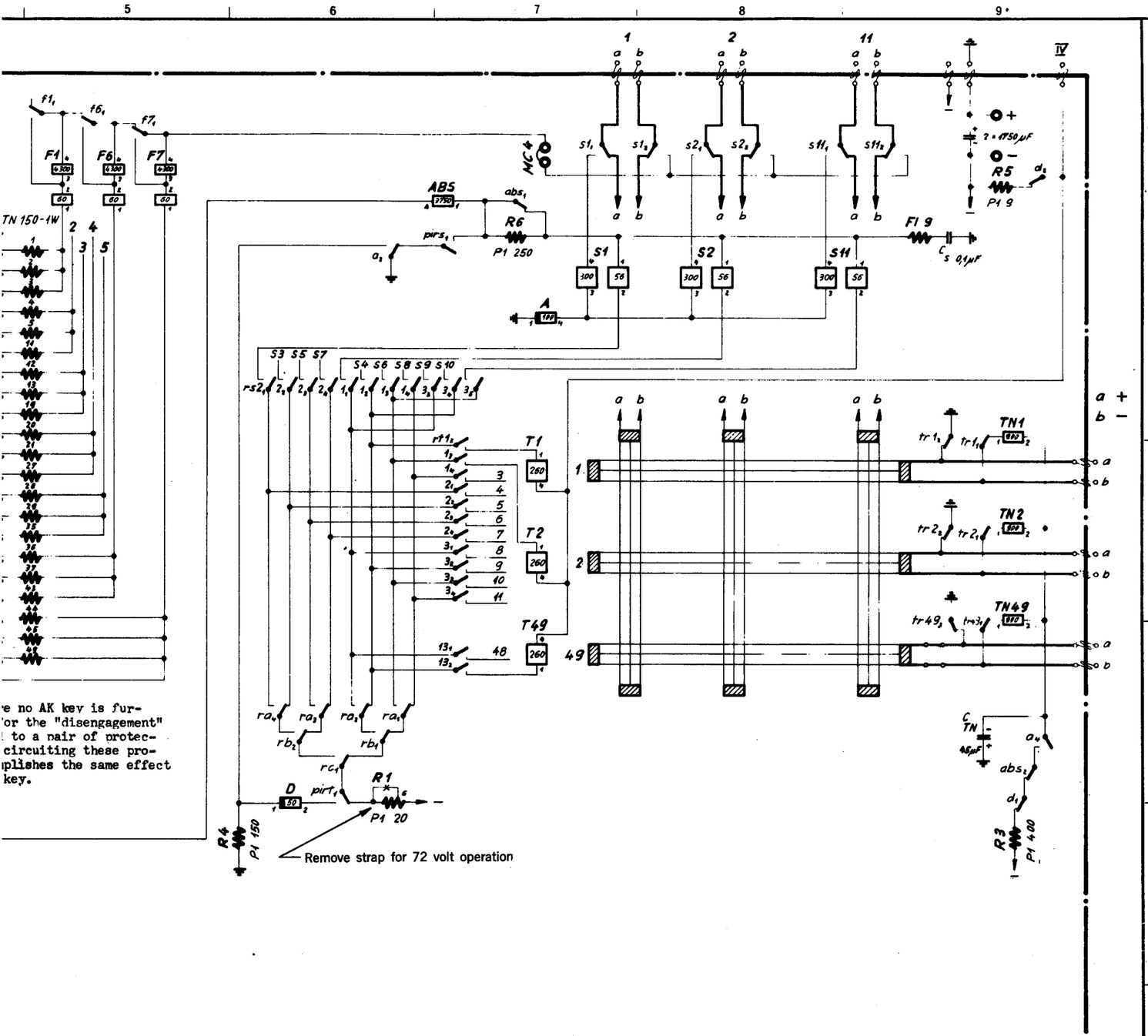
x Resistance P2 600

z Rectifier V 2793L

70 V ~

RTN 150-1W

cut ou



e no AK key is fur-
'or the "disengagement"
to a pair of protec-
circuiting these pro-
plishes the same effect
key.

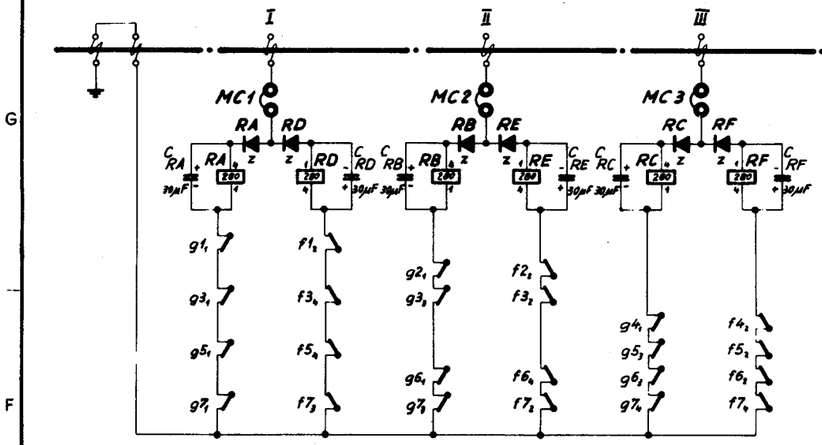
Relays	Contacts	F5	G5	RB	RS3	SCH
01 40 02 30	5 3 1 6 4 2		r 2F r 3F	2G w 6D w 6D	a 7F a 7F a 7D w 2D w 1D	1D 4D r 2C
A 7F	r 1D w 2E	F6 5G 5G w 5G r 2F r 3F	G6 r 3F r 2F r	RC 3G a 2D w 6D w 1E	RT1 2D a 7E a 7E w 2D a 7E	ABS 7G r 7G r 9D
D 6C 3C	a 3D w 9D r 9G	F7 5G 5G r 2F r 3F w 5G r 2F	G7 4G r 2F r 1F r 3F r 4G	RD 2G w 2E w 2E w 2E w 2E	RT2 2D a 7E a 7E a 7E a 7E	
F1 5G 5G	w 5G r 2G	G1 4G r 1G r 4G	G8 4G r r r	RE 2G w 3E w 2E	RT3 2D a 7E a 7E a 7E a 7E	
F2	w r 2G	G2 r 2G r	PIRS 1D 1C a 7G	RF 3G w 2E w	RT4-11 a a a a	
F3	w r 2F r 2F	G3 r 2F r 1F r	PIRT 3C 2C a 2D w 6D r 2C	RS1 1D a 6F a 6F a 6F a 6F	RT12 3D a a a a	
F4	w r 3F	G4 r 3F r	RA 1G w 6D w 6D w 6D w 6D	RS2 2D a 6F a 6F a 6F a 6F	RT13 3D a 7D a 7D	ak a 4D

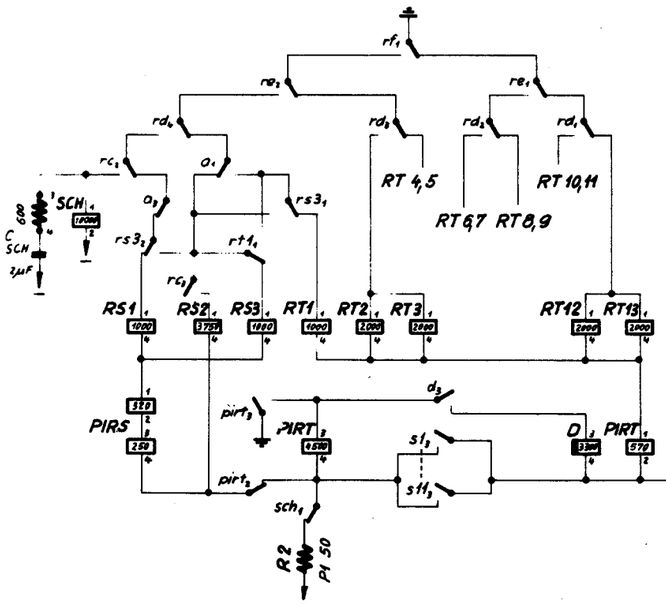
Lifting Coil	Contacts	Subscr. Coil	Subscr. Relays	Cont.
1 2 3 4 5 6	6 5 4 3 2 1	01 40 02 30	3 2 1	2 0 1 0
S1 7F 7F	a 3C w 7B w 8G	T1 7E	TN1 9F	0 4G
S2 8F 8F	a 3C w 9G w 8G	T2 7E	TN2 9E	0 4F
S11 8F 9F	a 3C w 8G w 9G	T49 7D	TN49 9E	0 4D
		Discon. rod	reak cont.	
		tr1	r 9F r 9E	
		tr2	r 9E r 9E	
		tr49	r 9E r 9D	

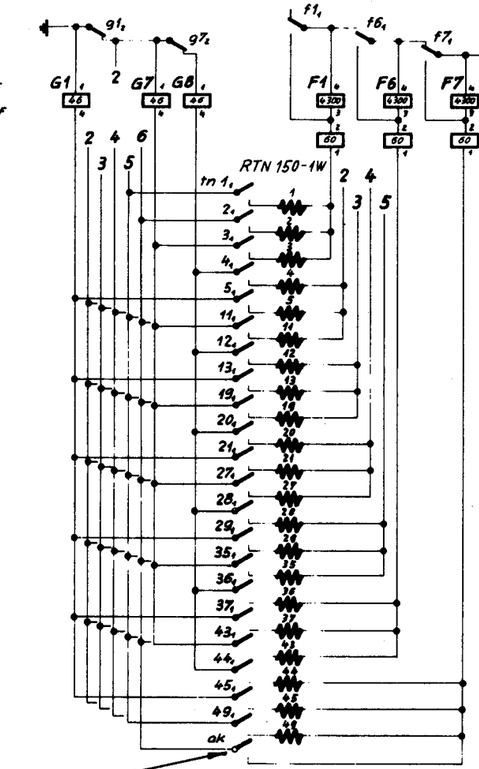
Relays and coils seen from wiring side

S 11889

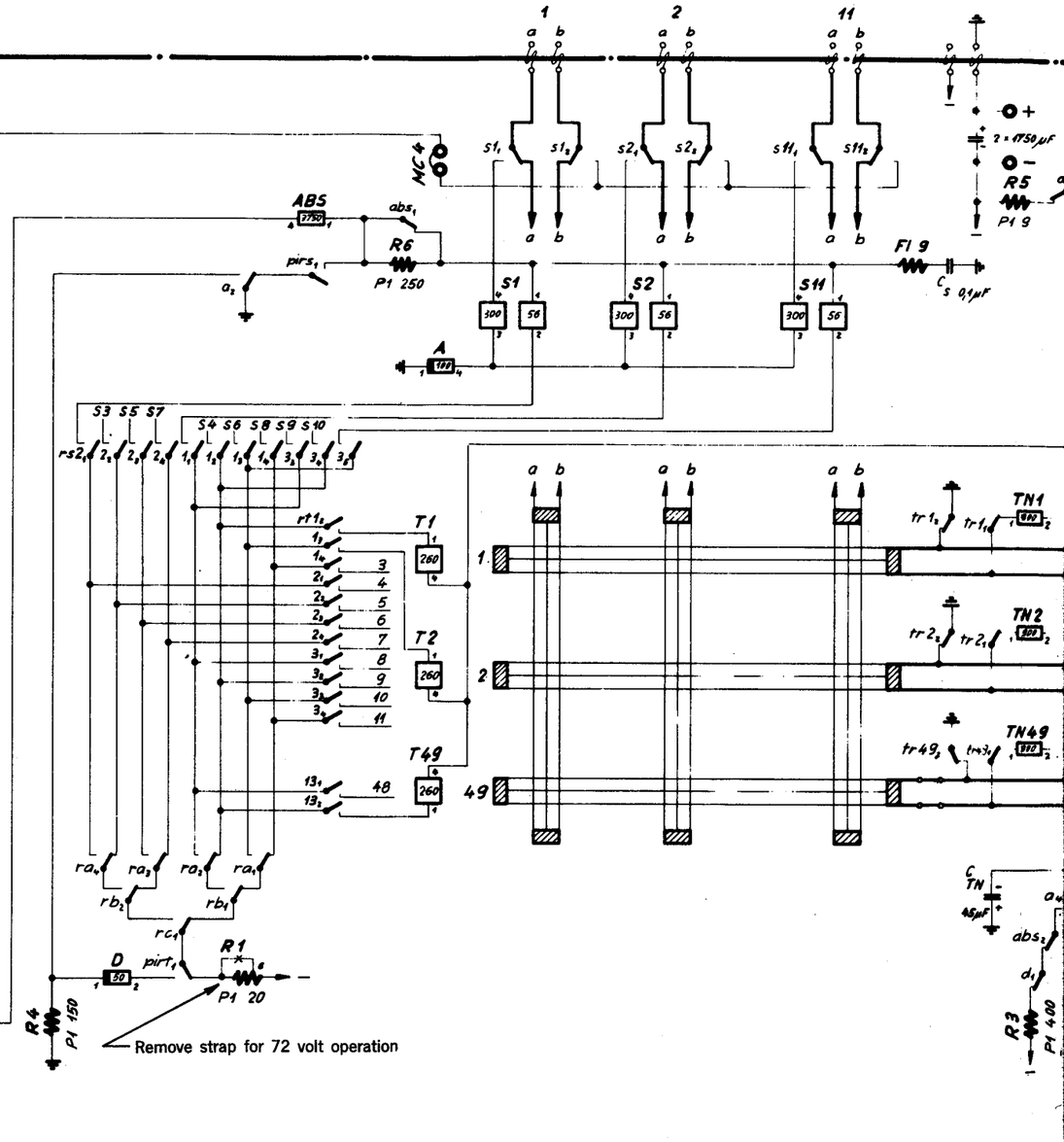
GFELLER LINE CONCENTRATOR REMOTE UNIT 49−11+1−2







Note: In units where no AK key is furnished, the wiring for the "disengagement" feature is connected to a pair of protector springs. Short circuiting these protector springs accomplishes the same effect as operating the AK key.



Remove strap for 72 volt operation