

GFELLER LINE CONCENTRATOR 49-9-2

SCHEMATICS

1. GENERAL

1.01 This is one of a group of sections pertaining to the Gfeller line concentrator. This section contains the schematics S10460-3, S10461-3, S10460-4, and S10461-4 for model 49-9-2, submitted by the Gfeller Company and an explanation of the symbols and drawing methods used.

1.02 This section is reissued to clarify and correct the schematic drawings issued by the Gfeller Company.

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

1.04 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 an arrowhead, in a straight line to its associated arrowhead (Fig. 2).

1.05 Resistor strapping with an X on the strap as indicated on R2, R5, R11, R13 of S10460-3, S10460-4 and R1 of S10461-3, S10461-4 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 S10460-3, S10460-4 and R1 of S10461-3, S10461-4 is required as indicated by the symbol ϕ .

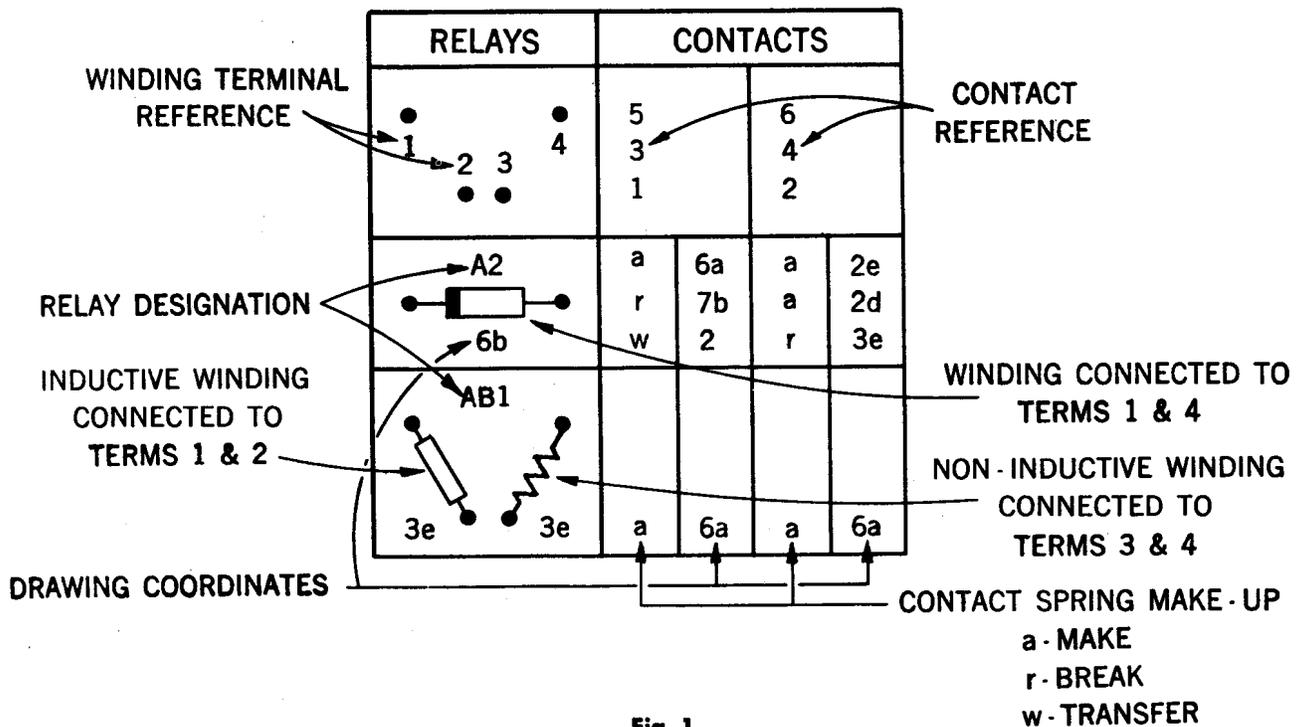


Fig. 1

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

1.07 The Gfeller switch vertical bars are drawn in a vertical plane and numbered 1 through 9. 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.

1.08 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.

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

1.10 Fig. 3 shows the schematic of the Gfeller line switch.

SYMBOL CHART

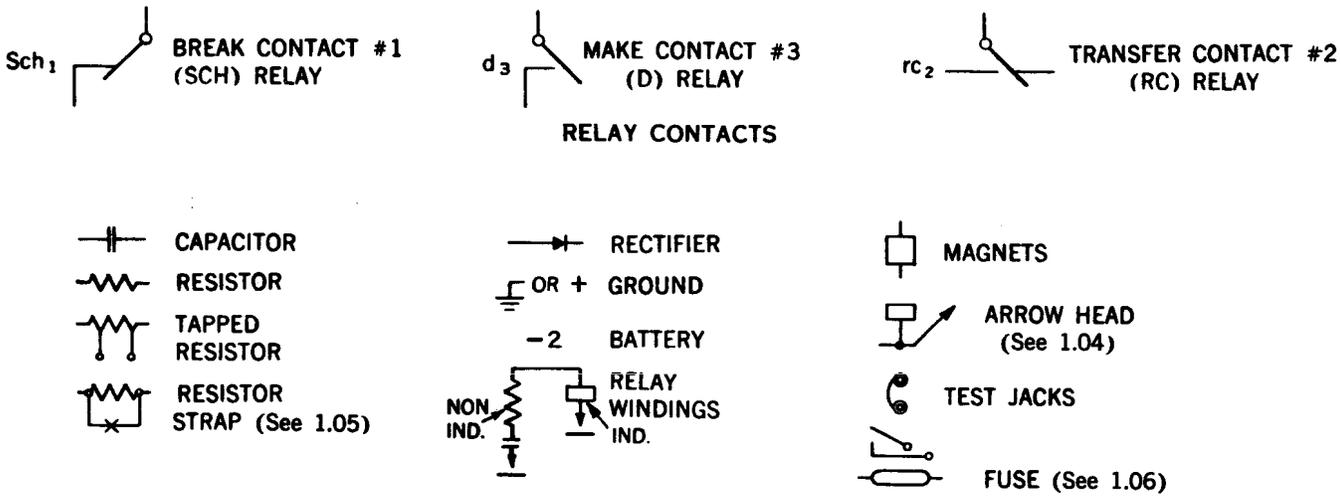


Fig. 2

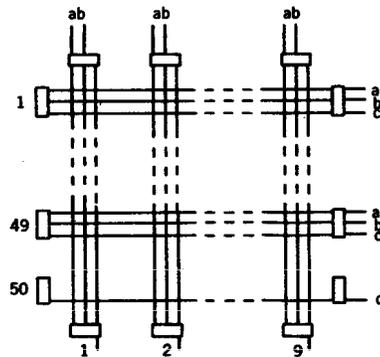
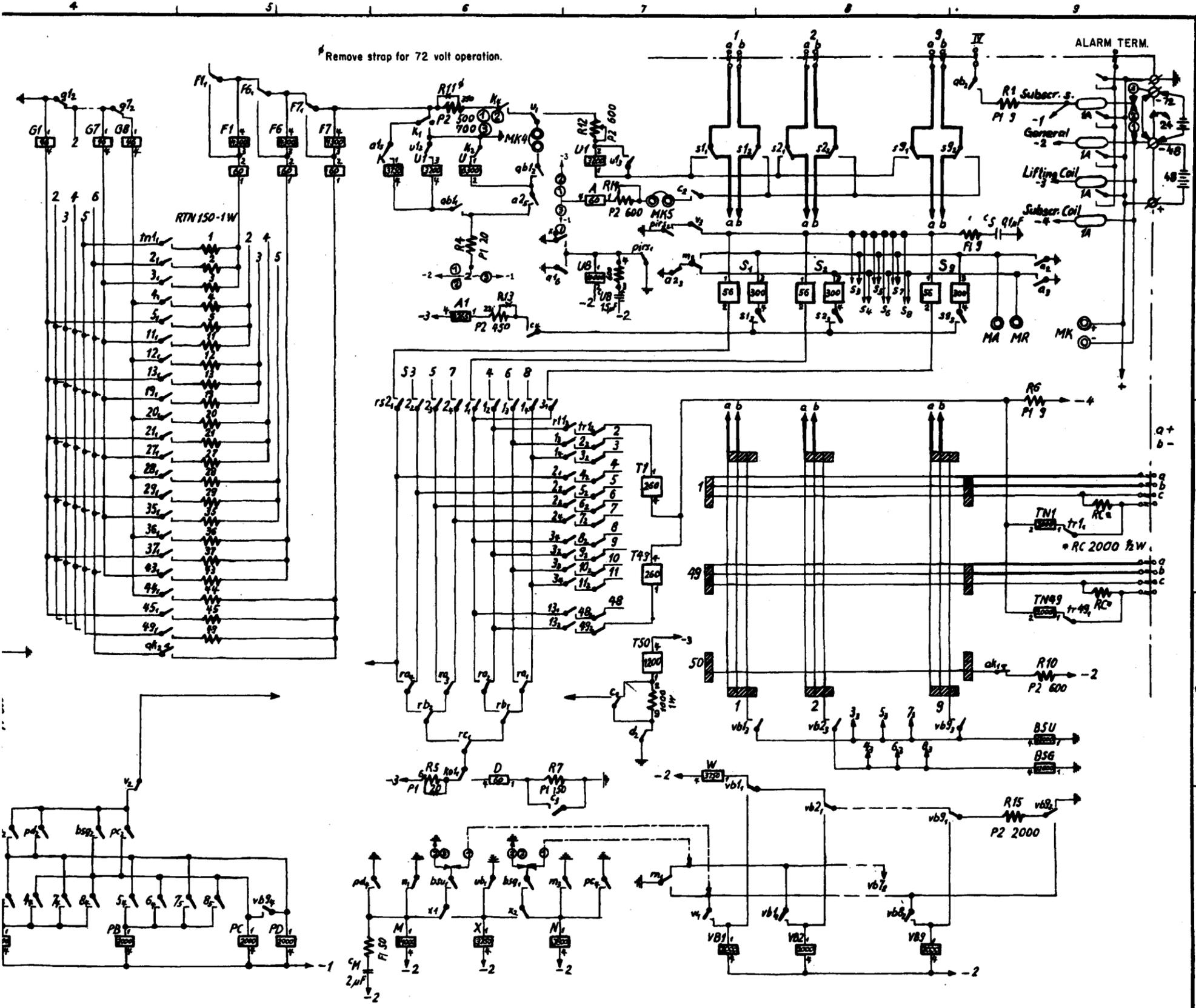


Fig. 3



Relays	Contacts	BSU	FS	G5	M
A 7a	a 9b	a 6e	a 4e	r 2b	a 7e
A1 6b	a 6a	a 7e	a 6b	r 3b	r 7e
A2 3d	a 2d	a 2d	r 7d	r 3b	r 1b
AB 7c	a 2e	a 9a	r 2a	r 4a	r 2b
AB1 3c	a 6a	a 6a	r 2b	r 1b	a 1d
BSG 9w	a 6e	a 4e	r 3b	r 3b	a 2e

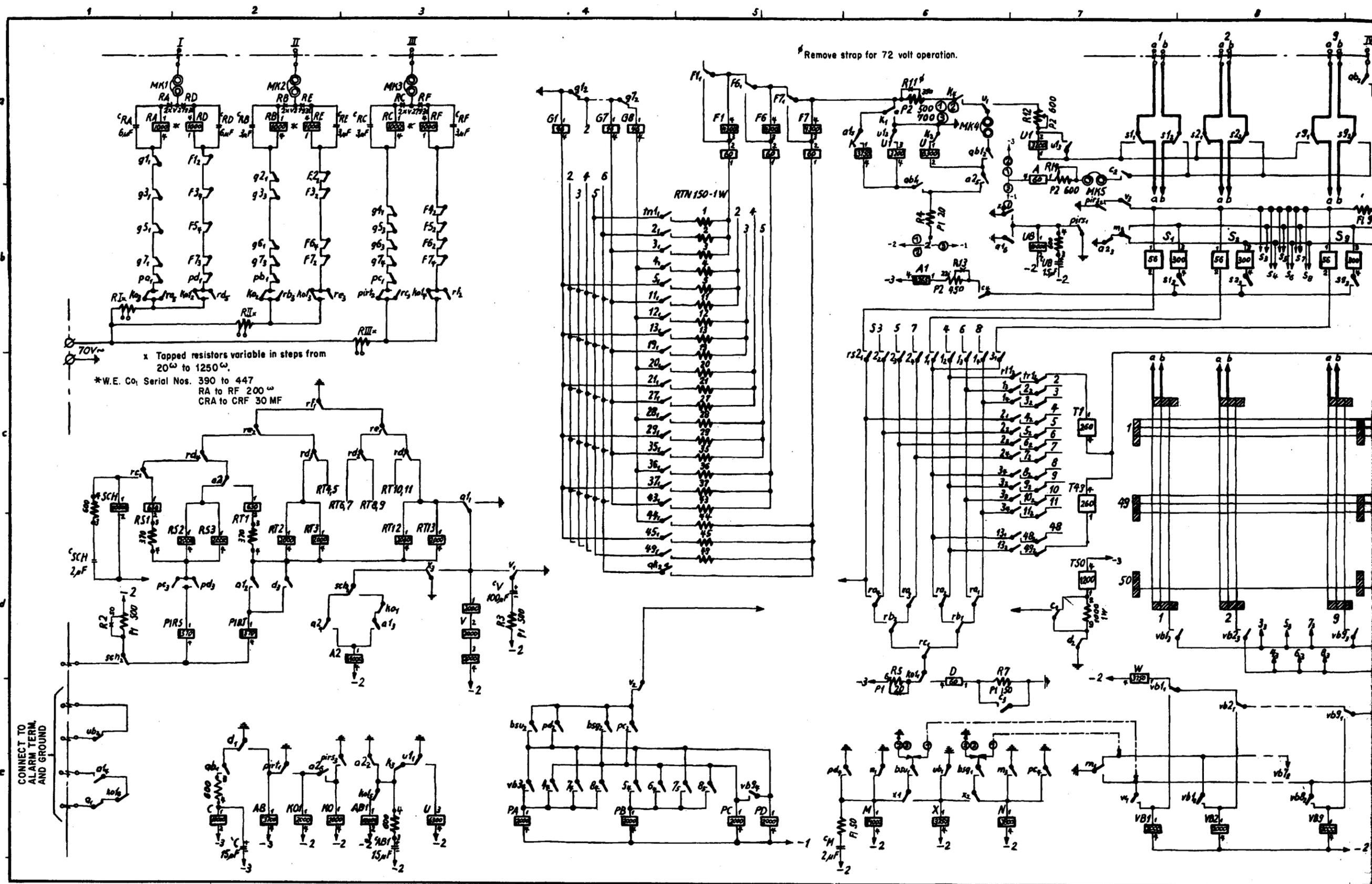
Relays	Contacts	RT12	VB1	VB8
RA 1a	a 1b	a 6c	a 7d	a 5e
RB 2a	a 2b	a 6c	a 8e	a 9d
RC 3a	a 3b	a 7c	a 9e	a 5e
RD 2a	a 2b	a 7c	a 4e	a 7e
RE 2a	a 2b	a 7c	a 4e	a 4e
RF 3a	w 2c	a 3b	a 4e	a 4e

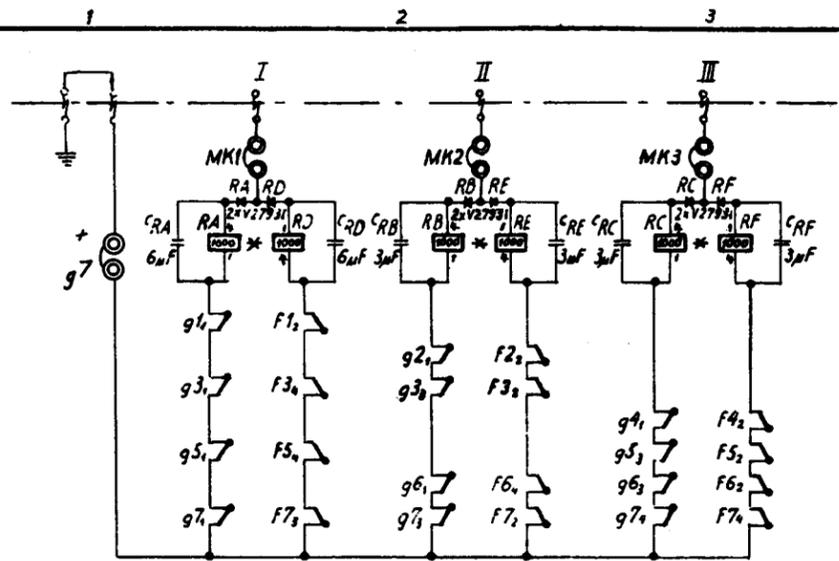
Lifting Coil	Contacts	Subscr. Coil	Subscr. relays	Contacts	Discontinuing	Drum
S1	a 8b	T1	TN1	a 4b	tr 1	r 7c
S2	a 8b	T49	TN49	a 4d	tr 49	r 7d
S9	a 9b	T50				r 9d

- OPTIONS**
- ① W.E. Co. Serial Nos. 2 to 4
 - ② W.E. Co. Serial Nos. 5 to 234
Nos. 270 to 331
 - ③ W.E. Co. Serial Nos. 235 to 269
Nos. 332 to 447

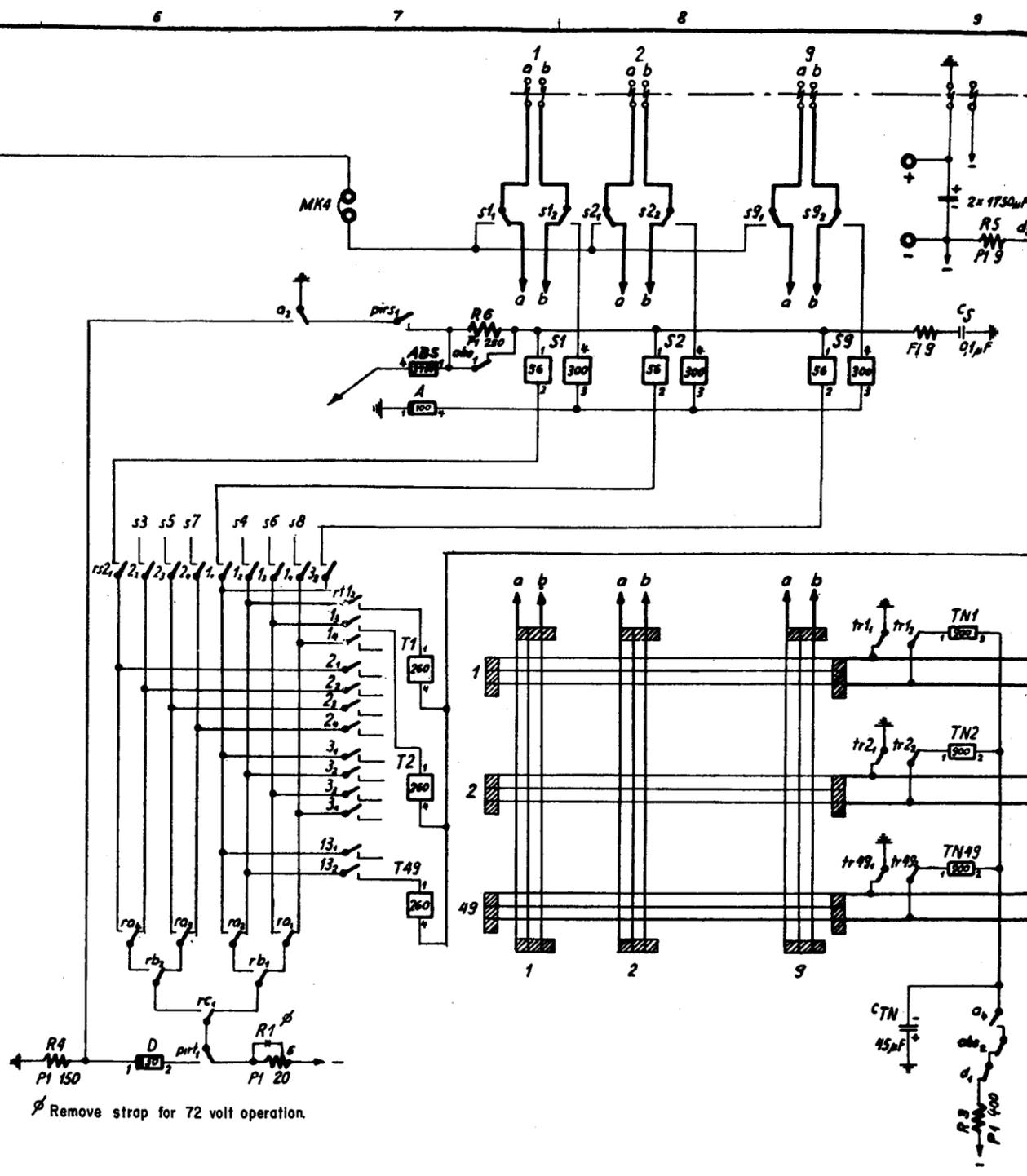
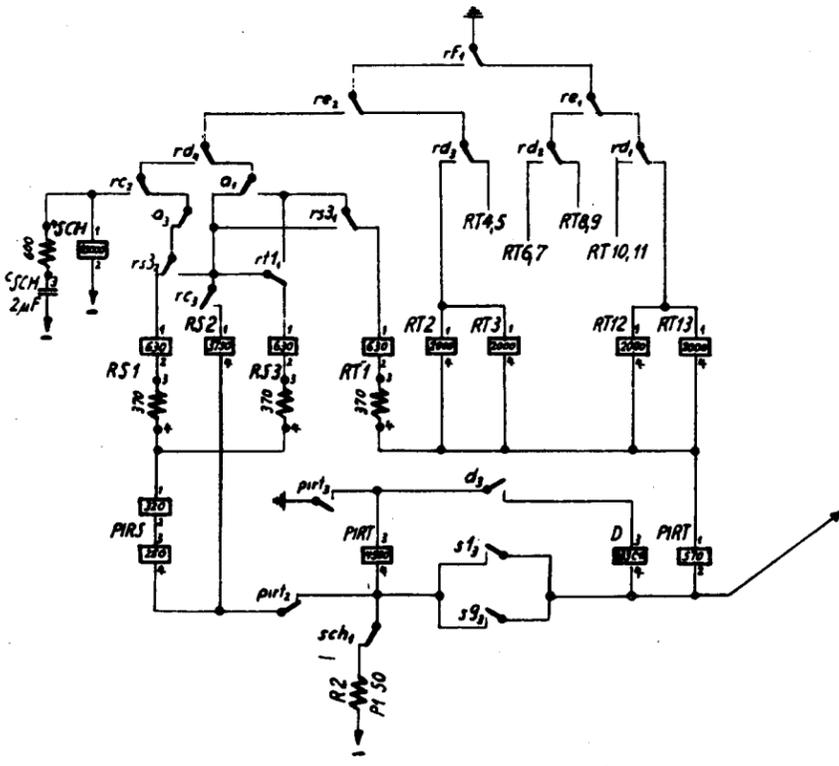
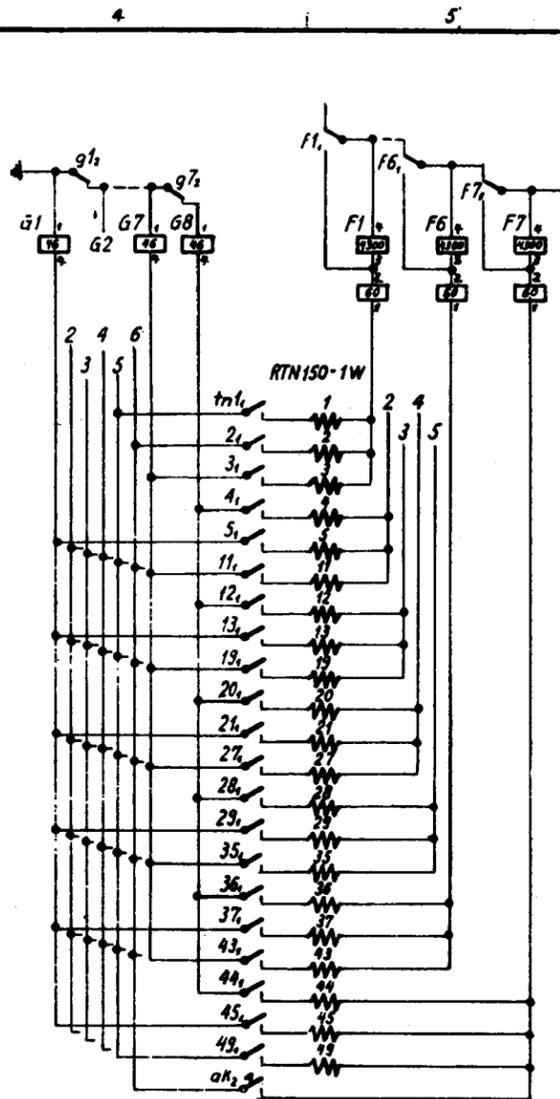
**GFELLER LINE CONCENTRATOR
49-9-2
CENTRAL OFFICE UNIT**

W.E. Co. Serial Nos. 2 thru 447 S10460-3

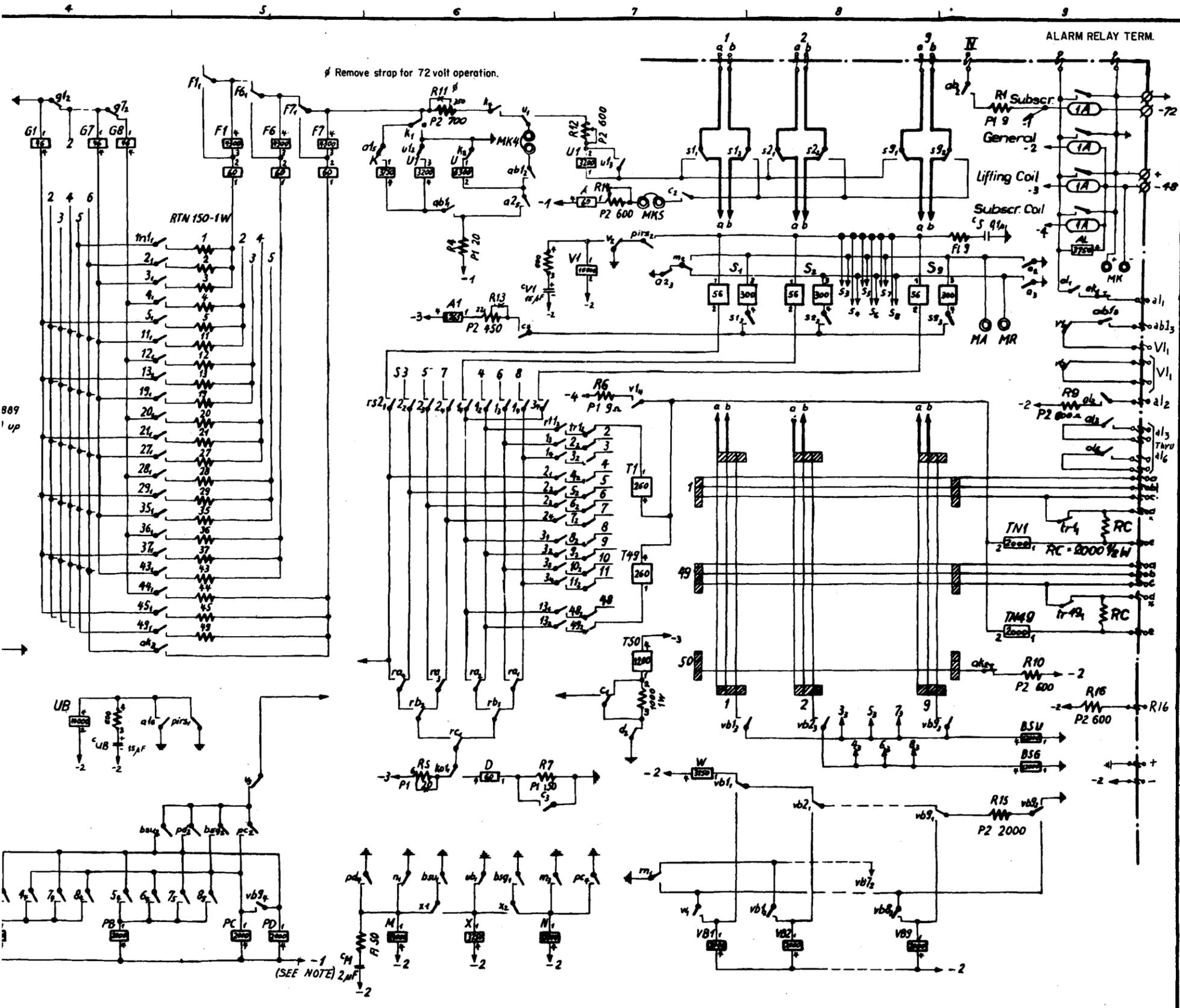




* W.E. Co. Serial Nos. 390 to 447 - RA to RF 280^W
CRA to CRF 30MF



Remove strap for 72 volt operation.



Relays	Contacts	BSU	F5	G5	H
A	9a	9d	a 6e a 4e	r 2b r 3b	r 6e a 7e w 7b
A1	6a 6b	a 2e a 6b a 7a	a 2e a 6b a 7a	r 2b r 3b	r 6e
A2	3d	a 2e a 2d	a 2e a 2d	r 2b r 3b	r 1b
AB	7e	a 2e a 9a	a 2e a 9a	r 2b r 3b	r 2b
AB1	3e	a 9b a 6a a 6a	a 9b a 6a a 6a	r 2b r 3b	r 2b
BSU	3d	a 6e a 5e	a 6e a 5e	r 3b r 3b	r 2d a 7b

PIRT	RS1	RT12	VB7
2d	w 2e r 3b	a 6c a 6c	a a a a
RA	a 1b w 6d w 6d	a 6c a 6c	a 7d a 7d
RB	a 2b w 6d w 6d	a 7c	a 8d a 8d
RC	a 3b w 6d w 6d	a 7c a 7c	a 9d a 9d
RD	a 2b w 3c w 3c	a 7c a 7c	a 7d
RE	a 2b w 3c w 2c	a 7c a 7c	a 7d
RF	w 2c a 3b	a a	a 7d

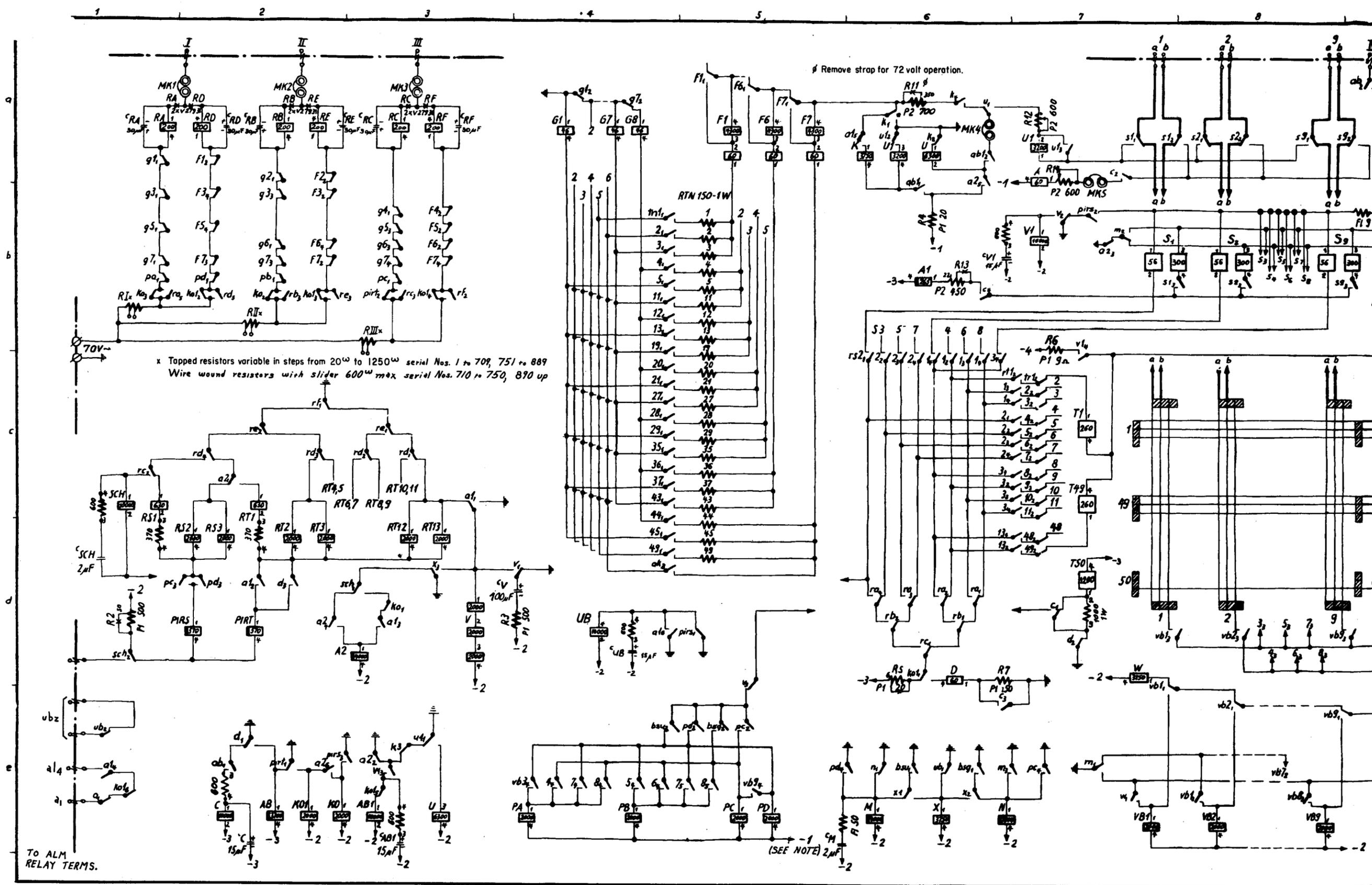
NOTE
 PA-PD fused to -1
 serial Nos. 448 to 1164
 PA-PD fused to -2
 serial Nos. 1165 and up

Lifting Coil	Contacts	Subscr. Coil	Subscr. relays	Disconnecting	Break contacts
S1	a 8b a 8a	71	TN1	a 4b	r 7c r 9c
S2	a 8b w 7a w 8a	T49	TN49	a 4d	r 49 r 7d r 9d
S9	a 9b a 8a w 8a	T50			

Relays and Coils Seen From Wiring Side

GFELLER LINE CONCENTRATOR
49-9-2
CENTRAL OFFICE UNIT

W. E. Co. Serial Nos. 448 and over **S10460-4**

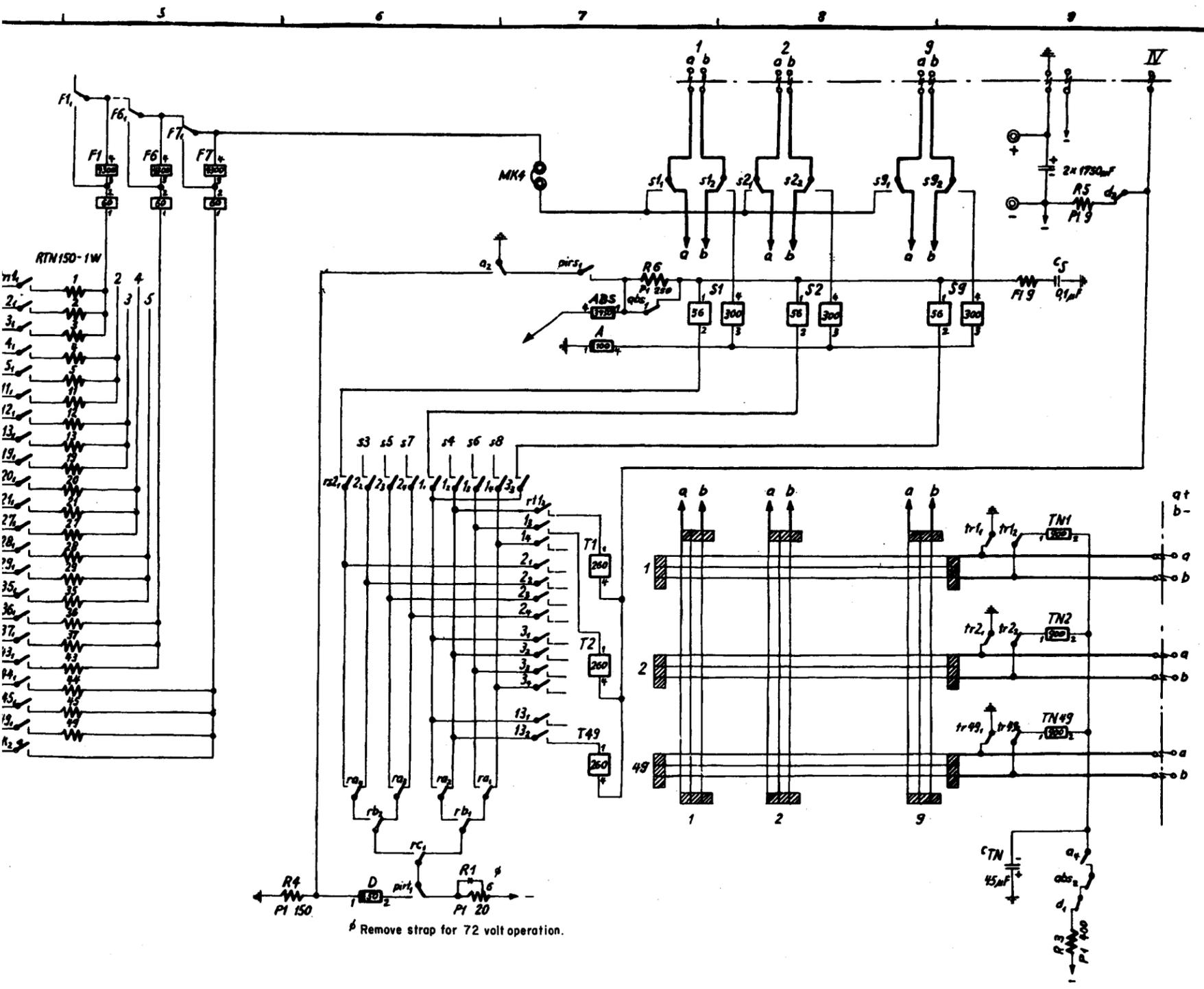


x Tapped resistors variable in steps from 20 ω to 1250 ω serial Nos. 1 to 709, 751 to 889
 Wire wound resistors with slider 600 ω max serial Nos. 710 to 750, 890 up

Remove strap for 72 volt operation.

TO ALM RELAY TERMS.

(SEE NOTE) 2 μ F



Relays	Contacts	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15	F16	F17	F18	F19	F20	F21	F22	F23	F24	F25	F26	F27	F28	F29	F30	F31	F32	F33	F34	F35	F36	F37	F38	F39	F40	F41	F42	F43	F44	F45	F46	F47	F48	F49	F50	F51	F52	F53	F54	F55	F56	F57	F58	F59	F60	F61	F62	F63	F64	F65	F66	F67	F68	F69	F70	F71	F72	F73	F74	F75	F76	F77	F78	F79	F80	F81	F82	F83	F84	F85	F86	F87	F88	F89	F90	F91	F92	F93	F94	F95	F96	F97	F98	F99	F100		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

Lifting Coil	Contacts	Subscr. Coil	Subscr. relays	Contacts	Disconnecting rod	Other contacts
6	3b	7				
S1	7b 8b	TN1				
S2	8b 8b	TN2				
S9	8b 9b	TN49				

Relays and Coils Seen From Wiring Side

GFELLER LINE CONCENTRATOR
49-9-2
REMOTE UNIT

W.E.Co. Serial Nos. 448 and over **S 10461-4**

