

**SERVICE**  
**1A2 KEY TELEPHONE SYSTEM**  
**PANELS**  
**583- AND 584-TYPE**

**1. GENERAL**

1.01 The 583- and 584-type panels provide mounting facilities for  $\frac{1}{4}$ -inch, 400-series KTUs having 18-contact connectors.♦

1.02 This section is reissued to add information on the 400G (CO/PBX line circuit) and 471A (battery reversal toll restriction circuit) KTUs.

1.03 This issue of the section is based on the following drawings:

SD-69502-01—Station Systems, Key Telephone System 1A2, 583-Type Panel Connections

SD-69552-01—Station Systems, Key Telephone System 1A2, 584B Panel Connections

SD-69591-01—Station Systems, Key Telephone System 1A2, 584C Panel Connections

SD-69559-01—Station Systems, Key Telephone System 1A2, Tie Line and Station Line Circuits

SD-69917-01—Low-Voltage Monitor Circuit

♦SD-69513-01—Key Telephone System 1A2, CO or PBX Line Circuit

SD-69651-01—Key Telephone System 1A2, CO or PBX Line Circuit (400G)

SD-69921-01—Key Telephone System 1A2, Toll Restriction Circuit♦

If this section is to be used with equipment or apparatus reflecting later issues of the drawings, reference should be made to the SDs and CDs to determine the extent of the changes and the manner in which the section may be affected.

1.04 Station, power and interpanel connections to 583A (MD) and 584A (MD) panels are provided with wire-wrap terminals. The KS-16363, List 1 hand grip wrapping tool should be used to wrap stripped wires. A KS-16492, List 2 unwrapping tool should be used to remove a wire-wrapped termination.



*See appropriate sections in Divisions 069, 074, and 075 which provide reference guides to tool identification, parts, operational requirements, and ordering information, plus approved preparation procedures for connecting wires to terminals.*

1.05 Power and interpanel connections to 584B (MD) and 584C panels are made to screw terminals. Station connections are made by using connector cables.

**2. IDENTIFICATION**

**PURPOSE**

- To provide mounting facilities for the following KTUs:
  - (a) 400-Type—CO/PBX line circuit
  - (b) 401A—Manual intercom line circuit
  - (c) 415A—Automatic dc signaling, private line circuit

**NOTICE**

Not for use or disclosure outside the  
Bell System except under written agreement

- (d) 461A—Manual signaling, ringdown private line circuit
- (e) 467A—Low-voltage monitor circuit
- (f) 469A—Lamp extender circuit
- (g) ♦471A—Battery reversal toll restriction circuit♦

#### APPLICATION

- Large centralized 1A2 Key Telephone System arrangements.

#### ORDERING GUIDE

- See Table A.

#### DESIGN FEATURES

**2.01** Panels mount on any frame structure designed for 23-inch wide mounting plates. Each panel is 4 inches high.

**2.02** Panels are equipped with 18-pin connectors and are primarily intended, by internal wiring, for use with the 400-type (CO or PBX line circuit) and 401A (manual intercom line circuit) KTUs. ♦Other 18-pin KTUs such as the 415A, 461A, 467A, 469A, and 471A are electrically and physically compatible and can be used in these panels.♦ The KTUs can be installed in any connector, with the exception of the 401A, 415A, and 461A KTUs which cannot be installed in J13 of the 583A (MD) or 584A (MD) panel. ♦The 467A KTU monitors the -24 volt signal battery supply for a low-voltage condition. No external connections are required for this KTU.♦

**2.03** The KTUs are locked into place by a slide retainer bar furnished with the panels. A second retainer can be installed on the bottom of the 584B (MD) panel. This 824015945 (P-40J594) retainer bar and three 802108001 (P-210800) mounting screws must be ordered separately.

#### A. 583A (MD) and 584A (MD) Panels

**2.04** The 583A (MD) panel accepts up to fifteen 400-type, or fourteen 401A, 415A, 467A, 469A, ♦or 471A♦ plug-in KTUs. The KTUs can be installed in any connector with the exception of the 401A, 415A, and 461A KTUs which cannot

be installed in J13. Common leads (LF, LW, etc) are interconnected to like-designated terminal leads on other 584-type panels.

**2.05** The 584A (MD) panel accepts thirteen 400-type, ♦467A, 469A, 471A,♦ or twelve 401A, 415A or 461A KTUs. The KTUs can be installed in any connector with the exception of the 401A, 415A, and 461A KTUs which cannot be installed in J13. The panel is equipped with a KS-15900, List 1 (10V ac) interrupter. When it is necessary to use 24 volts dc to operate the interrupter, substitute a KS-19384, List 1 (MD) or KS-19384, List 2 interrupter.

**2.06** The 583A and 584A panels are equipped with nine cartridge-type fuses for lamp, relay, and talk battery as shown in Table B.

**2.07** Lamp supply and "B" battery fuses serve two groups of connectors per panel: J1 through J8, and J9 through J13 on the 584A panel; J1 through J8, and J9 through J15 on the 583A panel.

**2.08** Common control leads such as LW, LF, etc, are factory-wired between the connectors and are terminated on individual 302A terminal strips serving two connectors each. These common leads are separated into two groups and can be associated with separate common equipment, or included as part of other grouped lines served by another panel.

#### B. 584B (MD) and 584C Panels

**2.09** These panels (Fig. 1 and 2) are similar in capacity and function to the 584A (MD) panel. The 400-series KTUs and the KS interrupter must be ordered separately.

**2.10** The 584B (MD) and 584C panels have identical front sides and accept thirteen 400-type 401A, 415A, 461A, 467A, 469A, ♦or 471A♦ plug-in KTUs. The KTUs may be intermixed in any connector position. A single connector (J14) is provided for the interrupter or for a 412A KTU (auxiliary relay circuit).

**2.11** All line and station wiring is factory-wired from the connectors to three 50-contact KS-type plugs numbered 1, 2, and 3 (Fig. 1 and 2) on the rear of the panel; this permits use of

◆ TABLE A ◆

## ORDERING GUIDE

PANEL				REPLACEABLE COMPONENTS	ASSOCIATED APPARATUS (ORDER SEPARATELY)
583A (MD)	584A (MD)	584B (MD)	584C		
		•	•	Fuse, 24C (2A)	
		•	•	Fuse, 24E (1/2A)	
		•	•	Fuse, 24F (5A)	
		•	•	Fuse, 24G (1-1/3A)	
•	•			Fuse $\frac{* \text{AGX-1}}{\dagger 361001}$ (1A)	
•	•			Fuse $\frac{* \text{AGX-2}}{\dagger 361002}$ (2A)	
	•			Interrupter KS-15900, L1	
			•	Plug, Option 834482952 (P-44Y295)	
		•		Plug, Option 814688685 (P-46H868)	
•	•	•	•		Block, Connecting, 66B4-25
		•	•		Cable, Connector, A25B, A65A, or A75B
		•	•		Interrupter, KS-15900, L1 (10V ac)
		•	•		Interrupter, KS-19384, L1 (MD)‡ or KS-19384, L2 (24V dc)
•	•	•	•		Units, Telephone Key 400D, 401A, 412A, 415A 461A, 467A, 469A, or 471A (order as required)

\* Bussman No.

† Littelfuse No.

‡ 584B (MD) and C only.

TABLE B  
FUSE DISTRIBUTION OF 583A (MD) AND 584A (MD) PANELS

DESIGN	FUSE		583A (MD)	584A (MD)
	NO.	CAPACITY	CONN SERVED	
LF1	1	2A	1-8	1-8
LW1	2	2A	1-8	1-8
LS	3	2A	1-8	1-8
B BAT.	4	1A	1-8	1-8
A BAT.	5	1A	7&8	7&8
SPARE	6	0.5A	—	*
LS	7	2A	9-15	9-13
B BAT.	8	1A	9-15	9-13
LF2	9	2A	9-15	9-13
LW2	10	2A	9-15	9-13

\* Fuse 6 used when 584A (MD) panel is modified to accept 412A KTU.

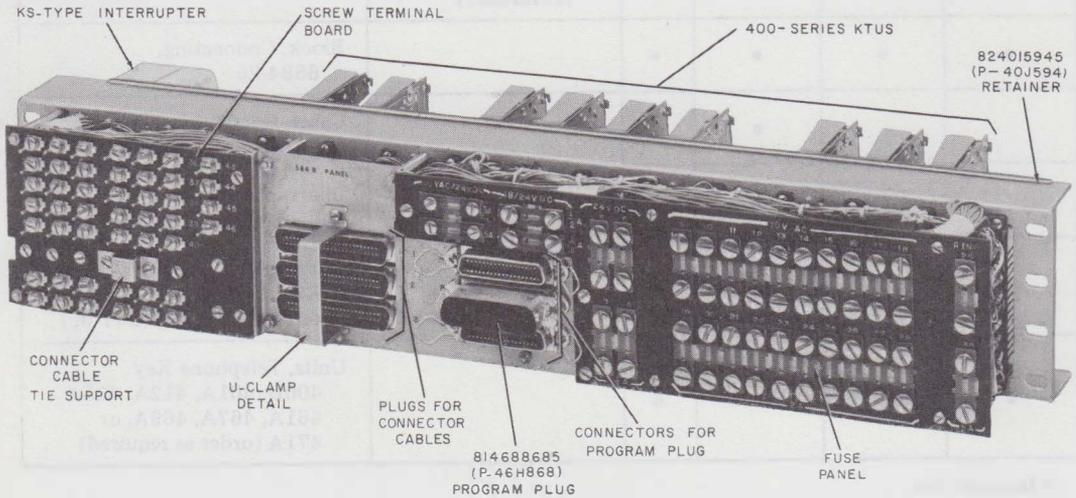


Fig. 1—584B (MD) Panel, Rear View

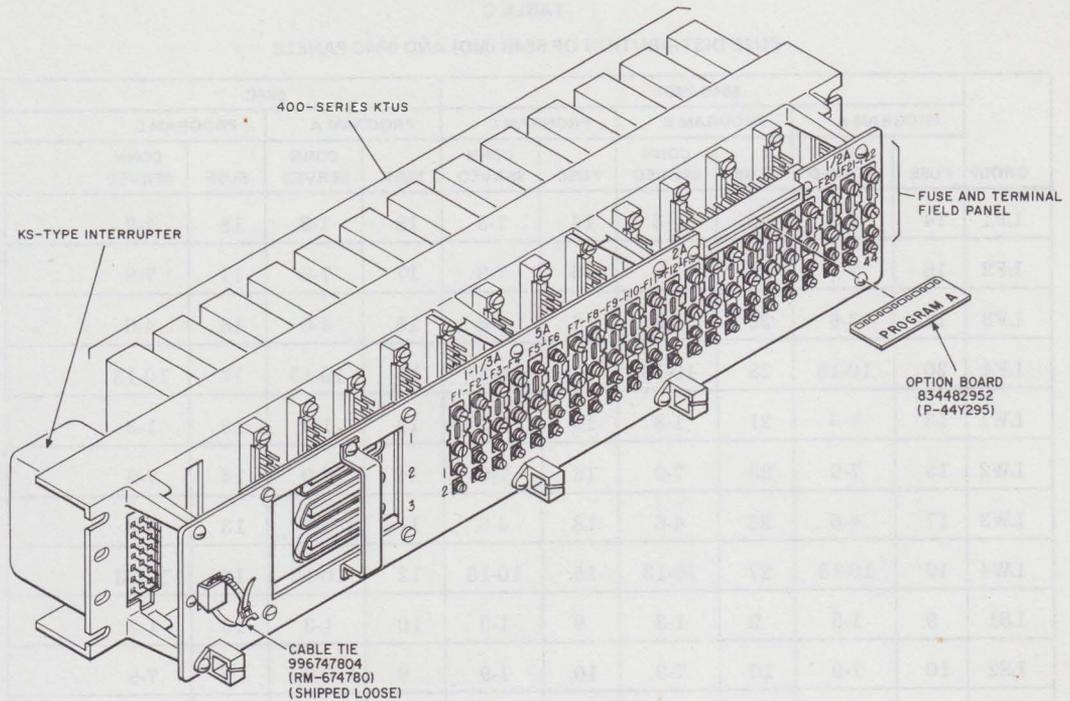


Fig. 2—584C Panel, Rear View

A-type connector cables for line and station terminations.

2.12 One A65A connector cable is used to provide connections to a distribution terminal for each panel; or one A75A, or three A25B connector cables may be used in place of the A65A connector cable. When one A75A or three A25B connector cables are used, the last 10 pair (green binder) of the A75A cable or the last, 10 pair of the A25B cable, connected to plug 3, are spare pairs.

2.13 Power supply wiring, interpanel strapping, and miscellaneous circuits are field-connected to the 46-screw terminal field of the 584B panel or 44-screw terminal field of the 584C panel.

2.14 The 584C panel features a combined fuse panel and screw terminal field while the 584B panel has a separate fuse panel and screw terminal field (Fig. 1). The panels are equipped

with 24-type fuses grouped according to potential and rating.

2.15 Factory-wired options allow rearrangement of lamp distribution and fusing within and/or between one or more of the panels.

2.16 Lamp fusing is divided into lamp flash (LF), lamp wink (LW), and lamp steady (LS). For lamp functions, each panel is divided into three groups of three lines each and one group of four lines (Table C). No more than 50 lamps can be supplied from any group **or the capacity of the interrupter contacts will be exceeded.**

2.17 Fusing and terminal assignments of the 584C panel differ extensively from the 584B panel. Fuse assignments are shown in Table D.

2.18 The three 34-contact connectors on the 584B panel lettered A, B, and C (Fig. 1) serve

TABLE C  
FUSE DISTRIBUTION OF 584B (MD) AND 584C PANELS

GROUP	584B (MD)						584C			
	PROGRAM A		PROGRAM B		PROGRAM C		PROGRAM A		PROGRAM C	
	FUSE	CONN SERVED								
LF1	14	1-3	22	1-3	14	1-3	18	1-3	18	1-3
LF2	16	7-9	24	7-9	16	7-9	17	7-9	17	7-9
LF3	18	4-6	26	4-6	14	4-6	16	4-6	18	4-6
LF4	20	10-13	28	10-13	16	10-13	15	10-13	17	10-13
LW1	13	1-3	21	1-3	13	1-3	13	1-3	13	1-3
LW2	15	7-9	23	7-9	15	7-9	14	7-9	14	7-9
LW3	17	4-6	25	4-6	13	4-6	11	4-6	13	4-6
LW4	19	10-13	27	10-13	15	10-13	12	10-13	14	10-13
LS1	9	1-3	9	1-3	9	1-3	10	1-3	10	1-3
LS2	10	7-9	10	7-9	10	7-9	9	7-9	9	7-9
LS3	11	4-6	11	4-6	11	4-6	8	4-6	10	4-6
LS4	12	10-13	12	10-13	12	10-13	7	10-13	9	10-13

as receptacles for the factory-wired lamp fusing and programming options. One 18-contact connector, J15 (Fig. 2), is used for the same purpose in the 584C panel. These permit distribution and fusing of lamp circuits, either within or external to the panel. One 814688685 (P-46H868) program option plug is furnished with each 584B panel, and one combined 834482952 (P-44Y295) Program A/Program C option plug is furnished with each 584C panel.

**2.19** When the 584B panel is used alone, the program option plug is placed in receptacle A. When the 584C panel is used alone, Program A is used by inserting the option plug into receptacle J15 so that **Program A** may be read from the plug top. The full output of the interrupter is associated within that specified panel. Under this arrangement, fusing for an average of 17 lamps per line circuit is provided, not to exceed 50 lamps per interrupter contact.

**2.20** *Before changing programs, remove power cord from outlet to preclude any possibility of blowing fuses.*

**2.21** With the program option plug in receptacle B of the 584B panel and the 10-volt ac input to the interrupter changed to ground, the entire output of the interrupter is used to synchronously drive auxiliary (slave) relay equipment such as the 412A KTU. All lamp flash and lamp wink functions, including those of the master panel, are served from auxiliary relay contacts. The 584C panel is not arranged for Program B.

**2.22** With the program option plug in receptacle C of the 584B panel or with the Program C side of the program option plug in the 584C panel, half of the output of the interrupter (LF1, LF2, LW1, and LW2 leads) is used to power an average of eight lamps per line within the panel.

**TABLE D  
FUSE ASSIGNMENT**

FUSE	584B(MD)		584C		
	CAPACITY	CIRCUIT		CAPACITY	CIRCUIT
1	5A	10V ac or dc	LW1, LW2 LF1, LF2	1-1/3 A	B Bat.
2			LW3, LW4 LF3, LF4		A Bat.
3	0.5A	Busy Tone			B Bat.
4		Interrupter Motor Supply (ac or dc)			A Bat.
5	1-1/3A	A Bat.		5A	LW3
6					LW4
					LF3
					LF4
7	B Bat.				LW1
8					LW2
9					LF1
10					LF2
11	2A	10V ac or dc		2A	LS4
12					LS3
13					LS2
14					LS1
15					LW4
16					LW3
17					LW2
18					LW1
19					LF4
20					LF3
21					LF2
22					LF1
23					LW4
24					LW3
25	LW2				
26	LW1				
27	LF4				
28	LF3				
29	0.5A	AT, 105v ac		0.5A	Interrupter Motor Supply (ac or dc)
30		105v ac (RN)			Busy Tone
					AT, 105v ac
					105v ac (RN)

The remaining interrupter leads (LF3, LF4, LW3, and LW4) may be used to power up to 100 lamps in succeeding panels not equipped with an interrupter, or these leads may be used to drive auxiliary relays requiring dc power. When driving auxiliary relays, it is necessary to provide optional wiring at the interrupter to avoid conflict with lamp battery supply (ac power) connected to other interrupter contacts.

### 3. INSTALLATION

**3.01** For information on apparatus mountings or relay racks on which panels can be mounted, refer to Section 463-140-100.

**3.02** The number of station or key cables that can be connected directly to the panels is limited; accordingly, a master distribution point at large key system installations is normally required. For further information on centralized Key Telephone System installations, refer to Section 518-010-101.

**Caution:** *When installing a 584C panel in the middle of a 16C apparatus mounting, do not plug the 400-type KTU into J1. This may damage the KTU.*

**Note:** To permit subgrouping of common audible signal controls, with or without separate relays or diode matrices, the line circuit leads may be cabled from the panels to a miscellaneous terminal block.

**3.03** Panels may be intermixed in large installations. To assist in the distribution of visual signals within an installation, the 584A panel can be modified to accept a 412A KTU in place of the interrupter (Fig. 19).

**3.04** Field cabling is dressed along the top rear of the 583A and 584A panels and fanned through the distributing rings to minimize congestion with factory wiring. Station and feeder cables are connected to the 302A terminal strips by means of an approved wire-wrapping tool. The terminal strips are designated A through H on the 583A panel, and A through G on the 584A panel.

**3.05** The connector cable(s) must be brought in from the left rear of the 584B or 584C panel for connection to plugs 1, 2, and 3. A tie point and a U-shaped clamping detail are provided to

support the cable(s) and to assure positive mating of plug and connector.

**3.06** Power supply connections to the panels may be made by using separate 20-gauge conductor cables, such as 450M (3-pair) or 451M (6-pair) cables.

**Note:** Where more than one supply is used to provide 10V ac and 24V dc power, the ground terminals of these supplies should be bonded together.

**3.07** Power connections for the 583A and 584A panels are made to the 302A terminal strips or to a fuse. All power connections for the 584B and 584C panels are made to the screw terminal field.

**3.08** Verify that each fuse in the panel is the correct rating specified for the circuit. Refer to Table B and/or D.

**3.09** Do not exceed lamp limitations of the interrupter in the 584-type panel or of external interrupters connected to panels. Installation of auxiliary relays may be required to provide sufficient current carrying capacity for:

- (a) Line lamp multiples above 20 appearances, or
- (b) Lamp flash or lamp wink features exceeding 2 amperes per interrupter contact.

**3.10** Install the program plug which provides the required arrangement.

**3.11** When the 584-type panel arranged for Program A is used to provide interrupted lamp signals to a 597B or 598B panel, the maximum number of 51A lamps fed by each 2-ampere fuse shall not exceed 50. If the 584-type panel is arranged for Program C, the maximum number of 51A lamps fed by each 2-ampere fuse shall not exceed 24.

**3.12** Table E shows lamp capacities and average lamps per line for the 583A and the 584A, B, and C panels.

**3.13** When it is necessary to synchronize all visual and audible signals for a particular telephone set, all line circuits for lines appearing on that

TABLE E

## LAMP DISTRIBUTION FOR 583A (MD), 584A (MD), 584B (MD) AND 584C PANELS

CAPACITY	583A (MD) PANEL	584A (MD) PANEL	USED ALONE PROGRAM A	584B (MD), 584C			
				AS FIRST PANEL E/W KS-15900, L1, OR KS-19384, L1, (MD) OR L2 INTERRUPTER PROGRAM B (584B ONLY) (MD)	AS FIRST PANEL E/W KS-15900, L1, OR KS-19384, L1 (MD) OR L2 INTERRUPTER PROGRAM C	AS SECOND PANEL WITHOUT 412A KTU PROGRAM C	AS SECOND OR SUCCEEDING PANEL E/W 412A KTU PROGRAM A
Lamps	100	100	200	200*	100	100	200
Average Lamps Per Line	7	8	17	17*	8	8	17

\* Entire output of interrupter used to drive auxiliary relays. Lamp flash and lamp wink functions are served from an external source.

telephone set should derive visual and audible signals from the same interrupter.

**3.14** On the 583A and 584A panels, "A" Bat. and GRD for the 401A, 415A, or 461A KTU is factory-wired *only* to connectors J7 and J8 (Table B). If other connectors (except J13) are to be equipped with 401A, 415A, or 461A KTU, "A" Bat. and GRD must be field strapped between terminal strip D (associated with J7 and J8) and other connectors to be equipped with the KTU. The 401A, 415A, 461A, 467A, and 471A KTUs can be installed in any receptacle of the 584B or 584C panel without additional wiring.

**3.15** When installing a 461A KTU in these panels, RG must be connected to GRD B as follows:

- 583A or 584A Panel—strap terminal 16 to 25 on TSC for jacks 1 through 8 or TSF for jacks 9 through 15.
- 584B—strap terminal 42 to 25 on screw terminal board.
- 584C—strap terminal 40 to 3 on screw terminal board.

**3.16** When installing a 469A KTU, the L lead of the 400-type KTU must be strapped to the

RC lead of the 469A KTU on the connecting block. The lamp output is on L lead of the 469A KTU. See Table F.

#### 4. CONNECTIONS

**4.01** Terminate station, CO, or PBX line connections directly to panels or to 66-type connecting blocks at the master distribution point. (See Table G.)

**4.02** Fig. 3 shows a block diagram of typical arrangements (and figure references) of 583- and 584-type panels.

#### 4.03 Connection Index:

Fig. 4—584A (MD) Panel Equipped With Interrupter (Panel can be used alone and also to control one other panel)

Fig. 5—583A (MD) or 584A (MD) Panel Not Equipped With Interrupter or 412A KTU

Fig. 6—584B (MD) Panel Equipped With Interrupter (Panel not used to control other panels)

TABLE F

## STRAPPING FOR THE 469A KTU IN THE 583- AND 584-TYPE PANELS

A 400D KTU				B 469A KTU			C 469A OUTPUT TO LAMPS		
CONN	BLK	TERM		CONN	BLK	TERM	CONN	BLK	TERM
J1	1	8F	STRAP	J1	1	10F	J1	1	8F
J2		18F		J2		20F	J2		18F
J3		28F		J3		30F	J3		28F
J4		38F		J4		40F	J4		38F
J5		48F		J5		50F	J5		48F
J6	2	8A		J6	2	10A	J6	2	8A
J7		18A		J7		20A	J7		18A
J8		28A		J8		30A	J8		28A
J9		38A		J9		40A	J9		38A
J10		48A		J10		50A	J10		48A
J11	3	8F		J11	3	10F	J11	3	8F
J12		18F		J12		20F	J12		18F
J13		28F		J13		30F	J13		28F
J14		38F		J14		40F	J14		38F
J15		48F		J15		50F	J15		48F

Note: Strap L lead from jack requiring lamp multiple (Col. A) to connector containing 469A KTU (Col. B). Connect lamp leads from terset to L lead of same 469A KTU connector (Col. C).

Fig. 7—584B (MD) Panel Equipped With Interrupter (Panel used to control one other panel)

Fig. 8—584B (MD) Panel Not Equipped With Interrupter or 412A KTU

Fig. 9—584C Panel Not Equipped With Interrupter or 412A KTU

Fig. 10—584C Panel Equipped With Interrupter (Panel not used to control other panels)

Fig. 11—584C Panel Equipped With Interrupter (Panel used to control one other panel)

Fig. 12—584B (MD) Panel Equipped With Interrupter (Master panel used to control up to 200 other panels each equipped with 412A KTU)

Fig. 13—584B (MD) Panel Equipped With 412A KTU (Panel used to control one other panel)

Fig. 14—584B (MD) Panel Equipped With 412A KTU (Panel not used to control other panels)

Fig. 15—584A (MD) Panel Equipped With 412A KTU (Panel used alone and also to control one other panel)

Fig. 16—584C Panel Equipped With 412A KTU (Panel not used to control other panels)

Fig. 17—584C Panel Equipped With Interrupter (Master panel used to control up to 200 other panels each equipped with 412A KTU)

Fig. 18—584C Panel Equipped With 412A KTU (Panel used to control one other panel)

Fig. 19—Modification of 584A (MD) Panel to Accept 412A KTU

Fig. 20—Manual Intercommunication Connections for 583A (MD) and 584A (MD) Panels

Fig. 21—Typical Functional Layout of 584B (MD) and 584C Panels Showing Line Circuit 1 Only

Fig. 22—Connections for 471A KTU in 583- or 584-Type Panel

## 5. MAINTENANCE

5.01 Maintenance on panels should be limited to tracing of wiring troubles, fuse replacement, and replacement of improperly operating KTUs.

5.02 When trouble is encountered, proceed as follows:

(a) Determine if trouble is located at the individual station or is common to the system.

(b) If common to the system:

(1) Check power supply and fuses.

(2) Determine which KTU is not operating properly.

(3) Replace KTU with one known to be in operating condition to determine whether trouble is located in the KTU or in external circuitry.

**Note:** Be sure that applicable options are correctly strapped on the replaced KTU.

(4) If replacement of the KTU does not correct the trouble, it is external to the KTU and the complete wiring should be checked.

**TABLE G**  
**CONNECTIONS TO DISTRIBUTION POINT AND/OR PANELS**

CIRCUIT		LEAD DESIG	DISTRIBUTION POINT BLOCK 1 66-TYPE CONNECTING BLOCK			TERMINAL ON PANEL			
			ROW	COL	COLOR BL-W BINDER	583A (MD)	584A (MD)	584B(MD), 584C	
								PIN	CONNECTOR
Line 1	CO PBX	T	1	F	W-BL	17A	26	1	
		R	2		BL-W	18A	1		
	STA	T	3		W-O	19A	27		
		R	4		O-W	20A	2		
		A	5		W-G	21A	28		
		A1	6		G-W	22A	3		
		LG	7		W-BR	23A	29		
		L	8		BR-W	24A	4		
		RG	9		W-S	25A	30		
		RC	10		S-W	26A	5		
Line 2	CO PBX	T	11		R-BL	1A	31		
		R	12		BL-R	2A	6		
	STA	T	13		R-O	3A	32		
		R	14		O-R	4A	7		
		A	15		R-G	5A	33		
		A1	16		G-R	6A	8		
		LG	17		R-BR	7A	34		
		L	18		BR-R	8A	9		
RG	19	R-S	9A		35				
RC	20	S-R	10A		10				
Line 3	CO PBX	T	21		BK-BL	17B	36		
		R	22		BL-BK	18B	11		
	STA	T	23		BK-O	19B	37		
		R	24		O-BK	20B	12		
		A	25		BK-G	21B	38		
		A1	26		G-BK	22B	13		
LG	27	BK-BR	23B		39				
L	28	BR-BK	24B		14				
RG	29	BK-S	25B		40				
RC	30	S-BK	26B		15				
Line 4	CO PBX	T	31		Y-BL	1B	41		
		R	32		BL-Y	2B	16		
	STA	T	33		Y-O	3B	42		
		R	34		O-Y	4B	17		
		A	35		Y-G	5B	43		
		A1	36		G-Y	6B	18		
LG	37	Y-BR	7B		44				
L	38	BR-Y	8B		19				
RG	39	Y-S	9B		45				
RC	40	S-Y	10B		20				
Line 5	CO PBX	T	41		V-BL	17C	46		
		R	42		BL-V	18C	21		
	STA	T	43		V-O	19C	47		
		R	44		O-V	20C	22		
		A	45		V-G	21C	48		
		A1	46		G-V	22C	23		
LG	47	V-BR	23C		49				
L	48	BR-V	24C		24				
RG	49	V-S	25C		50				
RC	50	S-V	26C		25				

TABLE G (Cont)  
 CONNECTIONS TO DISTRIBUTION POINT AND/OR PANELS

CIRCUIT		LEAD DESIG	DISTRIBUTION POINT BLOCK 2 66-TYPE CONNECTING BLOCK			TERMINAL ON PANEL			
			ROW	COL	COLOR O-W BINDER	583A (MD)	584A (MD)	584B(MD), 584C	
								PIN	CONNECTOR
Line 6	CO PBX	T	1	A	W-BL	1C	26	2	
		R	2		BL-W	2C	1		
	STA	T	3		W-O	3C	27		
		R	4		O-W	4C	2		
		A	5		W-G	5C	28		
		A1	6		G-W	6C	3		
		LG	7		W-BR	7C	29		
		L	8		BR-W	8C	4		
		RG	9		W-S	9C	30		
		RC	10		S-W	10C	5		
Line 7	CO PBX	T	11	R-BL	17D	31			
		R	12	BL-R	18D	6			
	STA	T	13	R-O	19D	32			
		R	14	O-R	20D	7			
		A	15	R-G	21D	33			
		A1	16	G-R	22D	8			
		LG	17	R-BR	23D	34			
		L	18	BR-R	24D	9			
		RG	19	R-S	25D	35			
		RC	20	S-R	26D	10			
Line 8	CO PBX	T	21	BK-BL	1D	36			
		R	22	BL-BK	2D	11			
	STA	T	23	BK-O	3D	37			
		R	24	O-BK	4D	12			
		A	25	BK-G	5D	38			
		A1	26	G-BK	6D	13			
		LG	27	BK-BR	7D	39			
		L	28	BR-BK	8D	14			
		RG	29	BK-S	9D	40			
		RC	30	S-BK	10D	15			
Line 9	CO PBX	T	31	Y-BL	17E	41			
		R	32	BL-Y	18E	16			
	STA	T	33	Y-O	19E	42			
		R	34	O-Y	20E	17			
		A	35	Y-G	21E	43			
		A1	36	G-Y	22E	18			
		LG	37	Y-BR	23E	44			
		L	38	BR-Y	24E	19			
		RG	39	Y-S	25E	45			
		RC	40	S-Y	26E	20			
Line 10	CO PBX	T	41	V-BL	1E	46			
		R	42	BL-V	2E	21			
	STA	T	43	V-O	3E	47			
		R	44	O-V	4E	22			
		A	45	V-G	5E	48			
		A1	46	G-V	6E	23			
		LG	47	V-BR	7E	49			
		L	48	BR-V	8E	24			
		RG	49	V-S	9E	50			
		RC	50	S-V	10E	25			

TABLE G (Cont)

## CONNECTIONS TO DISTRIBUTION POINT AND/OR PANELS

CIRCUIT	LEAD DESIG	DISTRIBUTION POINT BLOCK 3 66-TYPE CONNECTING BLOCK				TERMINAL ON PANEL			
		ROW	COL	COLOR G-W BINDER	583A (MD)	584A (MD)	584B(MD), 584C		
							PIN	CONNECTOR	
Line 11	CO PBX	T	1	F	W-BL	17F	26	3	
		R	2		BL-W	18F	1		
	STA	T	3		W-O	19F	27		
		R	4		O-W	20F	2		
		A	5		W-G	21F	28		
		A1	6		G-W	22F	3		
		LG	7		W-BR	23F	29		
		L	8		BR-W	24F	4		
		RG	9		W-S	25F	30		
		RC	10		S-W	26F	5		
Line 12	CO PBX	T	11	R-BL	1F	31			
		R	12	BL-R	2F	6			
	STA	T	13	R-O	4F	32			
		R	14	O-R	3F	7			
		A	15	R-G	5F	33			
		A1	16	G-R	6F	8			
		LG	17	R-BR	7F	34			
		L	18	BR-R	8F	9			
		RG	19	R-S	9F	35			
		RC	20	S-R	10F	10			
Line 13	CO PBX	T	21	BK-BL	17G	36			
		R	22	BL-BK	18G	11			
	STA	T	23	BK-O	19G	37			
		R	24	O-BK	20G	12			
		A	25	BK-G	21G	38			
		A1	26	G-BK	22G	13			
		LG	27	BK-BR	23G	39			
		L	28	BR-BK	24G	14			
		RG	29	BK-S	25G	40			
		RC	30	S-BK	26G	15			
Line 14	CO PBX	T	31	Y-BL	17H	41			
		R	32	BL-Y	18H	16			
	STA	T	33	Y-O	19H	42			
		R	34	O-Y	20H	17			
		A	35	Y-G	21H	43			
		A1	36	G-Y	22H	18			
		LG	37	Y-BR	23H	44			
		L	38	BR-Y	24H	19			
		RG	39	Y-S	25H	45			
		RC	40	S-Y	26H	20			
Line 15	CO PBX	T	41	V-BL	1H	46	(NOTE)		
		R	42	BL-V	2H	21			
	STA	T	43	V-O	3H	47			
		R	44	O-V	4H	22			
		A	45	V-G	5H	48			
		A1	46	G-V	6H	23			
		LG	47	V-BR	7H	49			
		L	48	BR-V	8H	24			
		RG	49	V-S	9H	50			
		RC	50	S-V	10H	25			

Note: When using other than A65A connector cable with the 584B (MD) panel, these leads are spare and are dead-dressed long enough to reach any screw terminal and stored behind back panel.

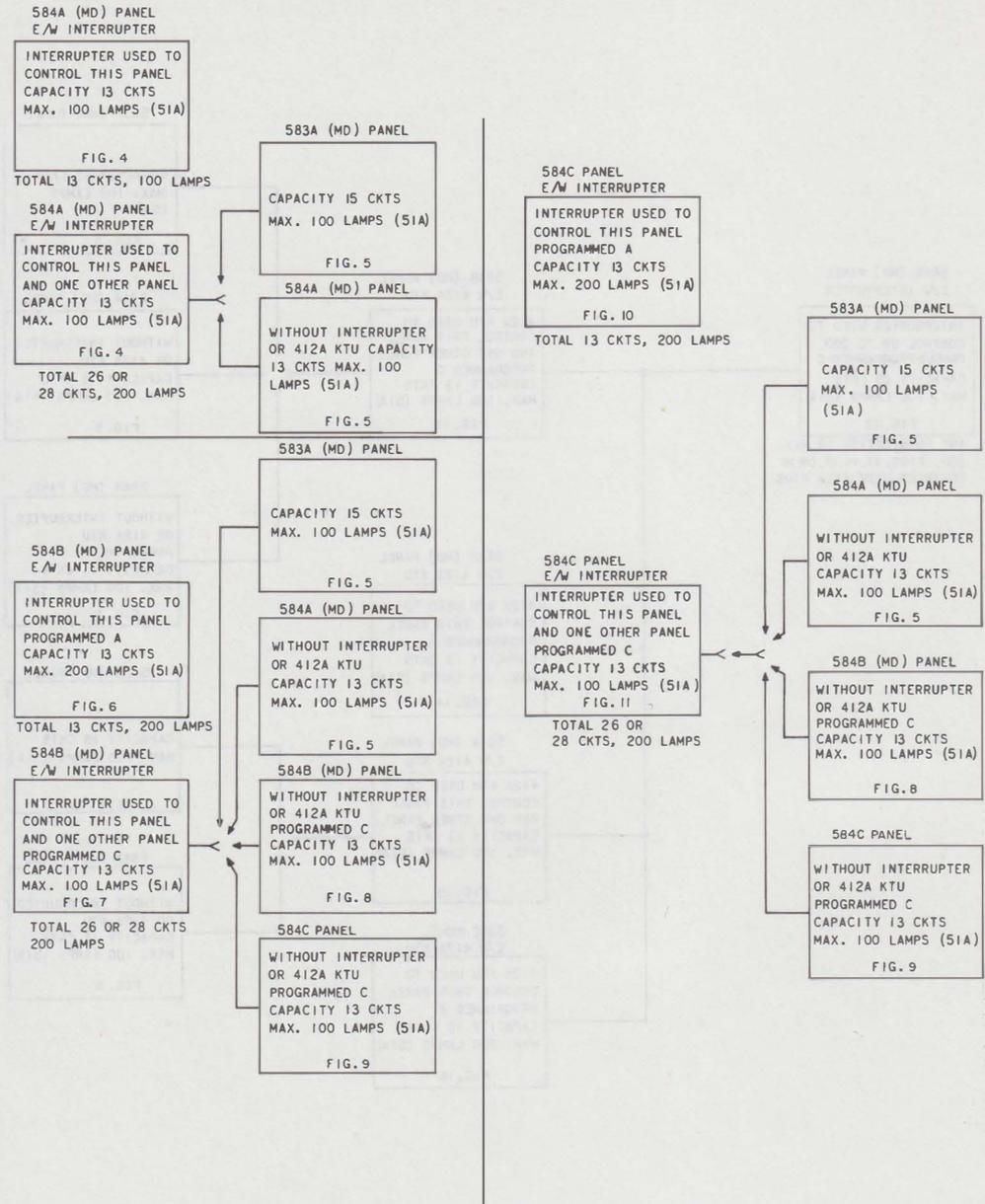


Fig. 3—Block Diagram Showing Arrangements of 583A (MD), 584A (MD), 584B (MD), and 584C Panels (Sheet 1)

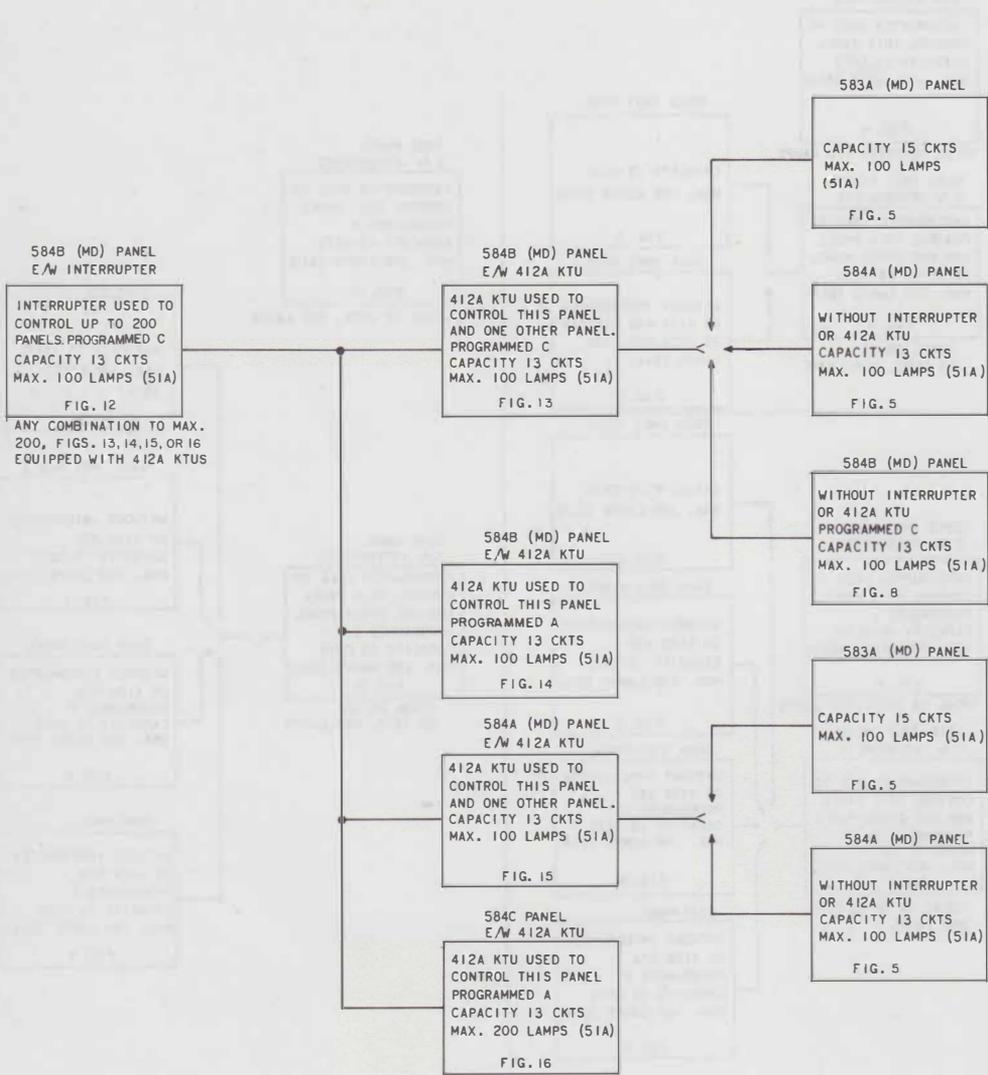


Fig. 3—Block Diagram Showing Arrangements of 583A (MD), 584A (MD), 584B (MD), and 584C Panels (Sheet 2)

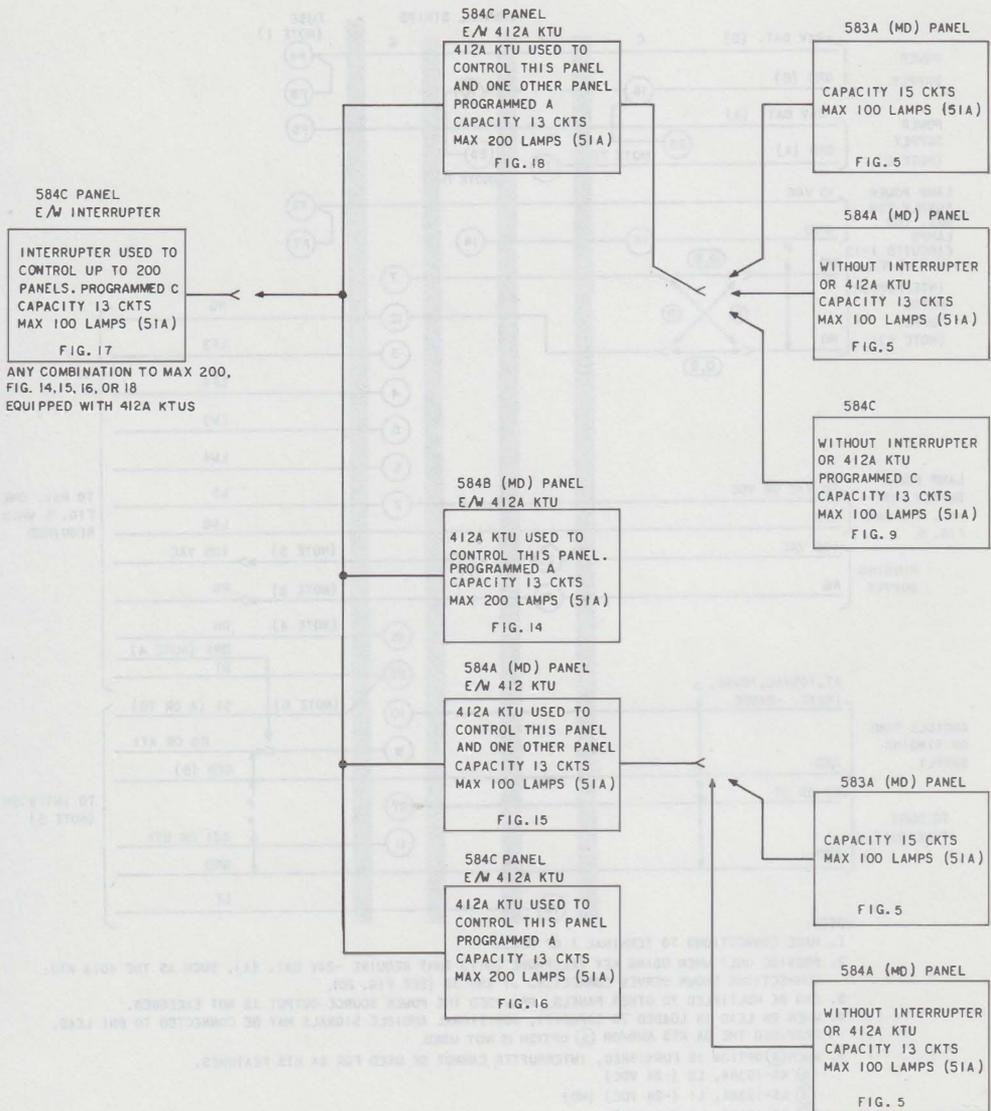
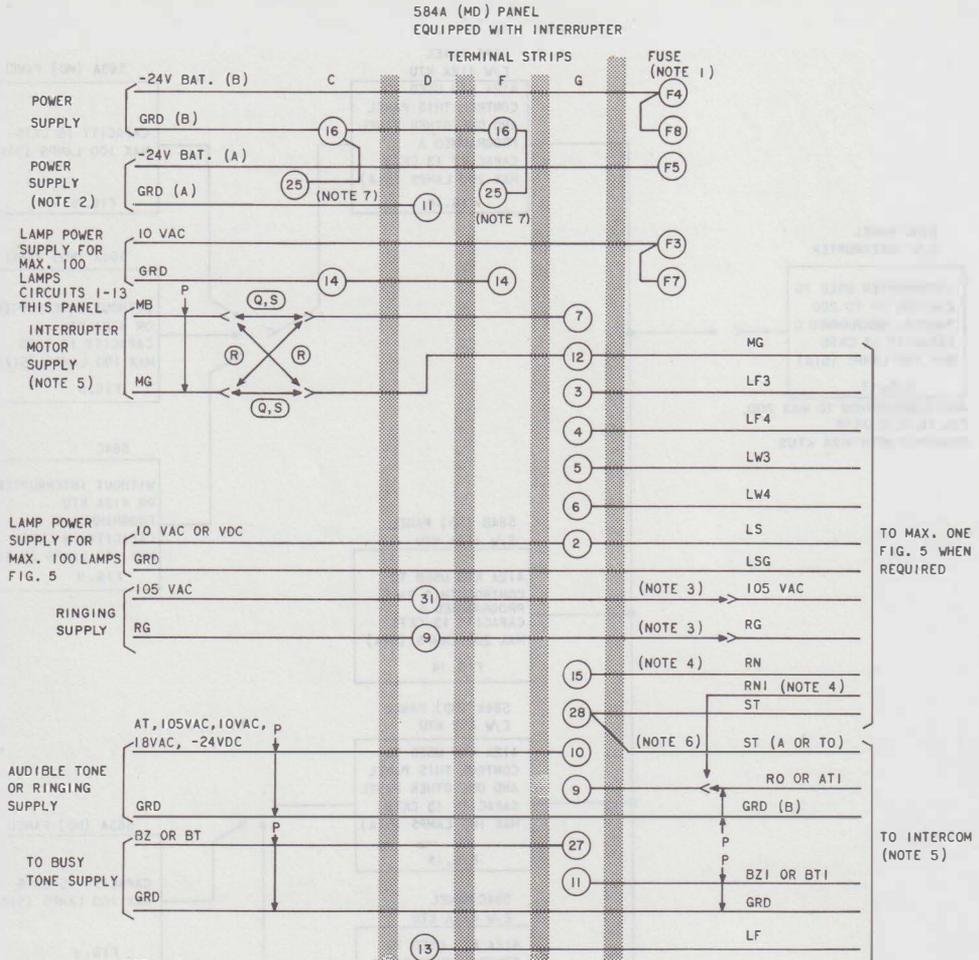


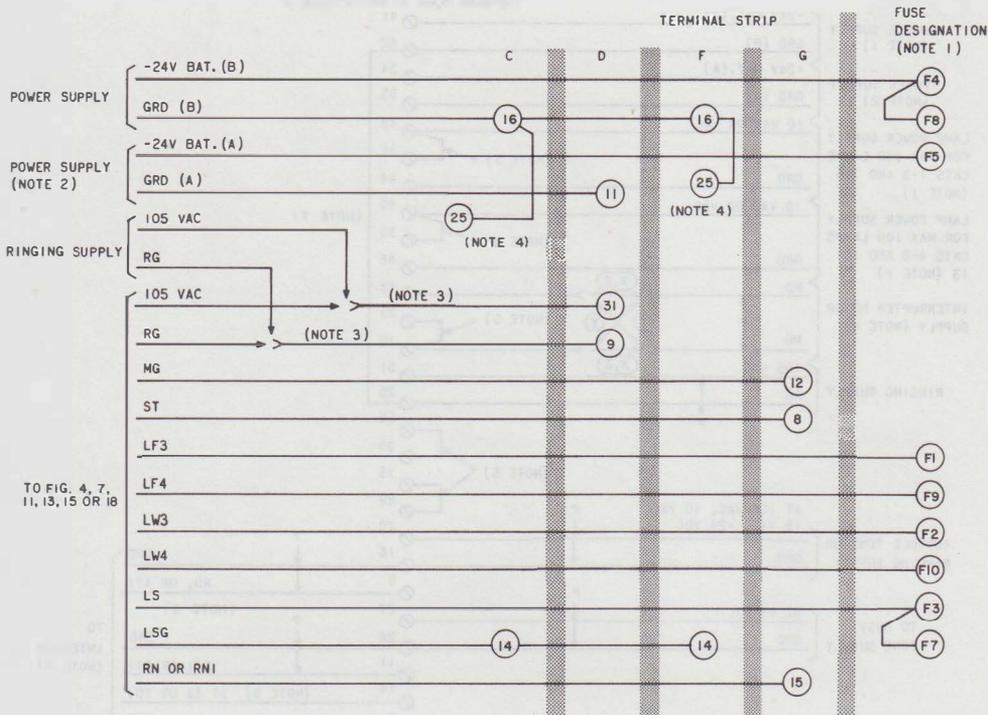
Fig. 3—Block Diagram Showing Arrangements of 583A (MD), 584A (MD), 584B (MD), and 584C Panels (Sheet 3)



1. MAKE CONNECTIONS TO TERMINAL 1 OF FUSE.
2. PROVIDE ONLY WHEN USING KEY TELEPHONE UNITS THAT REQUIRE -24V BAT. (A), SUCH AS THE 401A KTU; CONNECTIONS SHOWN SERVES CONNECTORS J7 AND J8 (SEE FIG. 20).
3. CAN BE MULTIPLIED TO OTHER PANELS, PROVIDED THE POWER SOURCE OUTPUT IS NOT EXCEEDED.
4. WHEN RN LEAD IS LOADED TO CAPACITY, ADDITIONAL AUDIBLE SIGNALS MAY BE CONNECTED TO RNI LEAD, PROVIDED THE 6A KTS AND/OR (S) OPTION IS NOT USED.
5. WHEN (R) OPTION IS FURNISHED, INTERRUPTER CANNOT BE USED FOR 6A KTS FEATURES.  
 (Q) KS-19384, L2 (-24 VDC)  
 (R) KS-19384, L1 (-24 VDC) (MD)  
 (S) KS-15900, L1 (10 VAC)
6. GROUND SUPPLIED TO ST LEAD FROM CONNECTING CIRCUIT MUST BE THE GROUND ASSOCIATED WITH THE SUPPLY USED TO DRIVE THE INTERRUPTER MOTOR.
7. ADD STRAP WHEN INSTALLING 461A KTU IN PANEL.

Fig. 4—584A (MD) Panel Equipped With Interrupter (Panel can be used alone and also to control one other panel)

583A (MD) PANEL OR 584A (MD) PANEL  
WITHOUT INTERRUPTER OR 412A KTU



TO FIG. 4, 7,  
11, 13, 15 OR 18

NOTES:

1. MAKE CONNECTIONS TO TERMINAL 1 OF FUSE.
2. PROVIDE ONLY WHEN USING KEY TELEPHONE UNITS THAT REQUIRE -24V BAT.(A), SUCH AS THE 401A KTU. CONNECTION AS SHOWN SERVES CONNECTORS J7 AND J8 (SEE FIG. 20).
3. IF LEADS FROM PRECEDING PANEL ARE LOADED TO CAPACITY, PROVIDE SEPARATE RINGING SUPPLY TO THIS PANEL.
4. ADD STRAP WHEN INSTALLING 461A KTU IN PANEL.

Fig. 5—583A (MD) or 584A (MD) Panel Not Equipped With Interrupter or 412A KTU

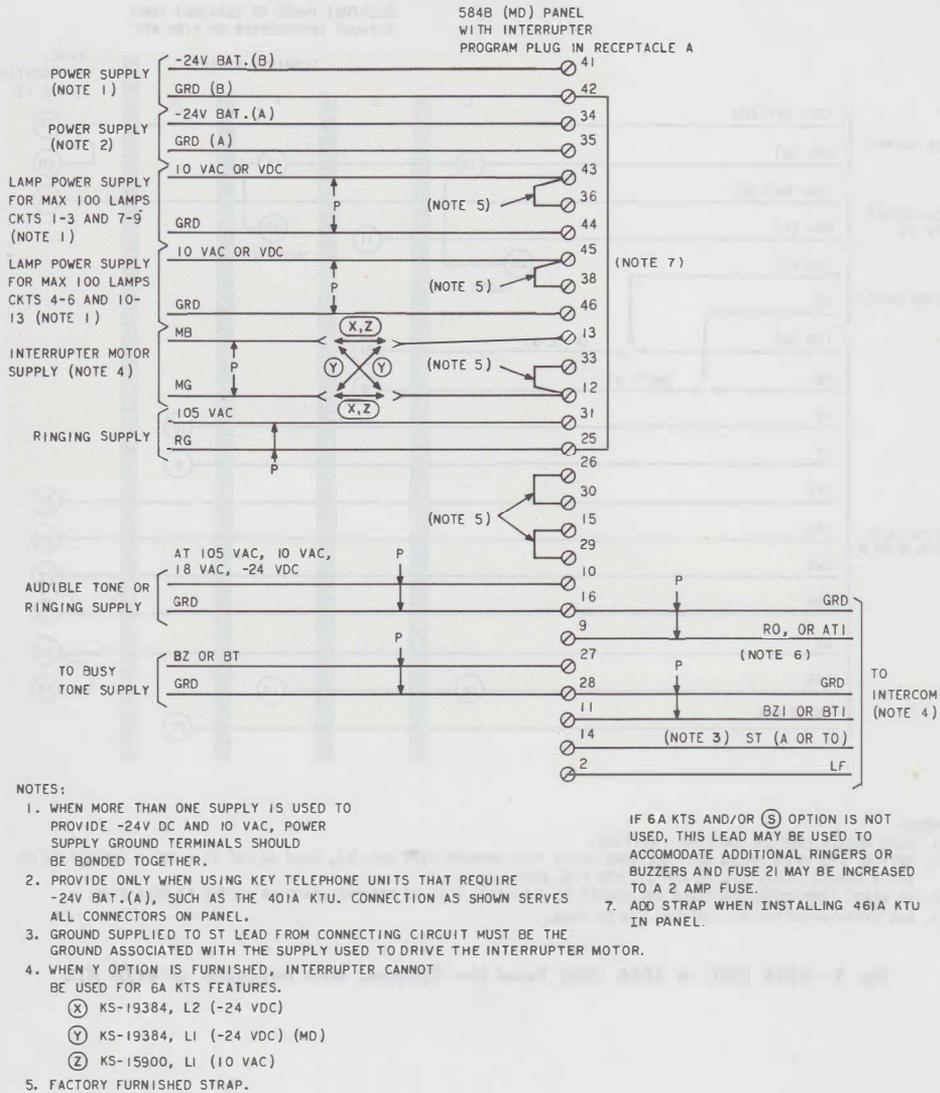


Fig. 6—584B (MD) Panel Equipped With Interrupter (Panel not used to control other panels)

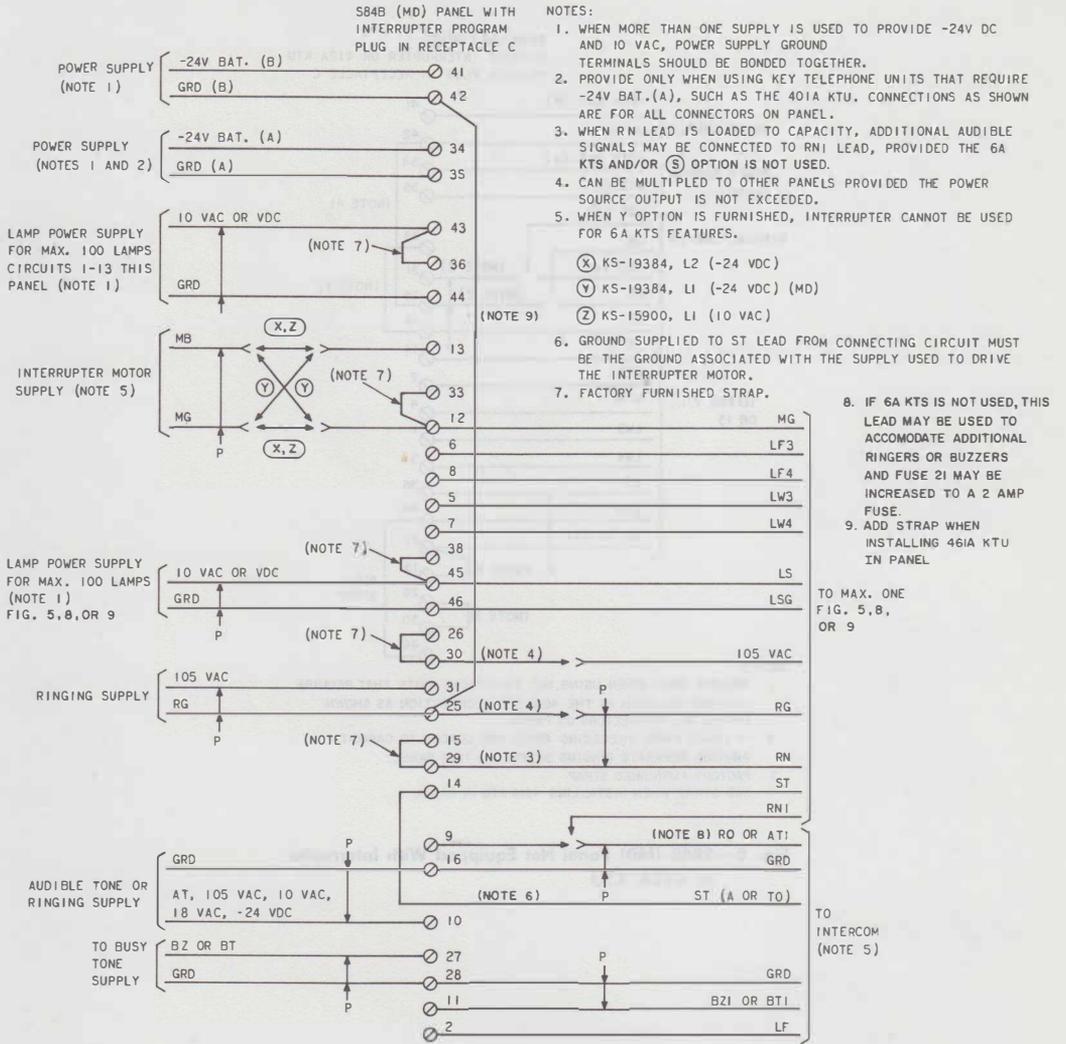
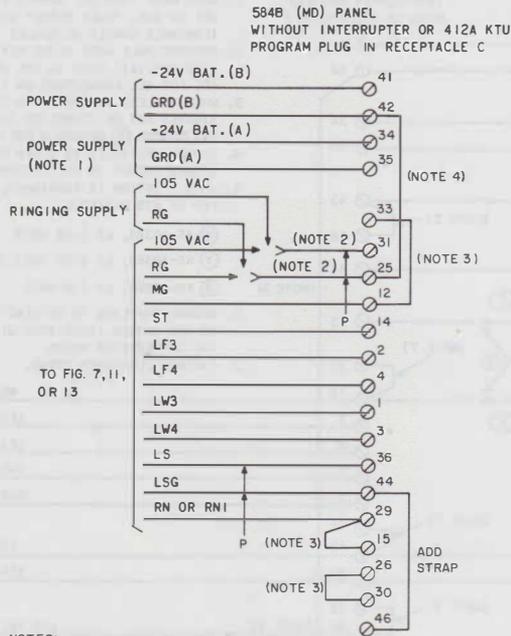
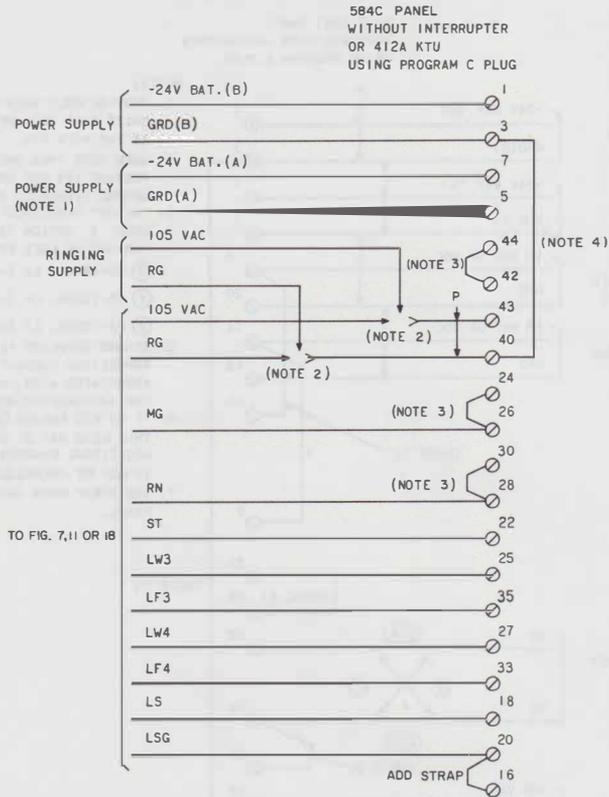


Fig. 7—584B (MD) Panel Equipped With Interrupter (Panel used to control one other panel)



**Fig. 8—584B (MD) Panel Not Equipped With Interrupter or 412A KTU**



**Fig. 9—584C Panel Not Equipped With Interrupter or 412A KTU**

584C (MD) PANEL  
EQUIPPED WITH INTERRUPTER  
USING PROGRAM A PLUG

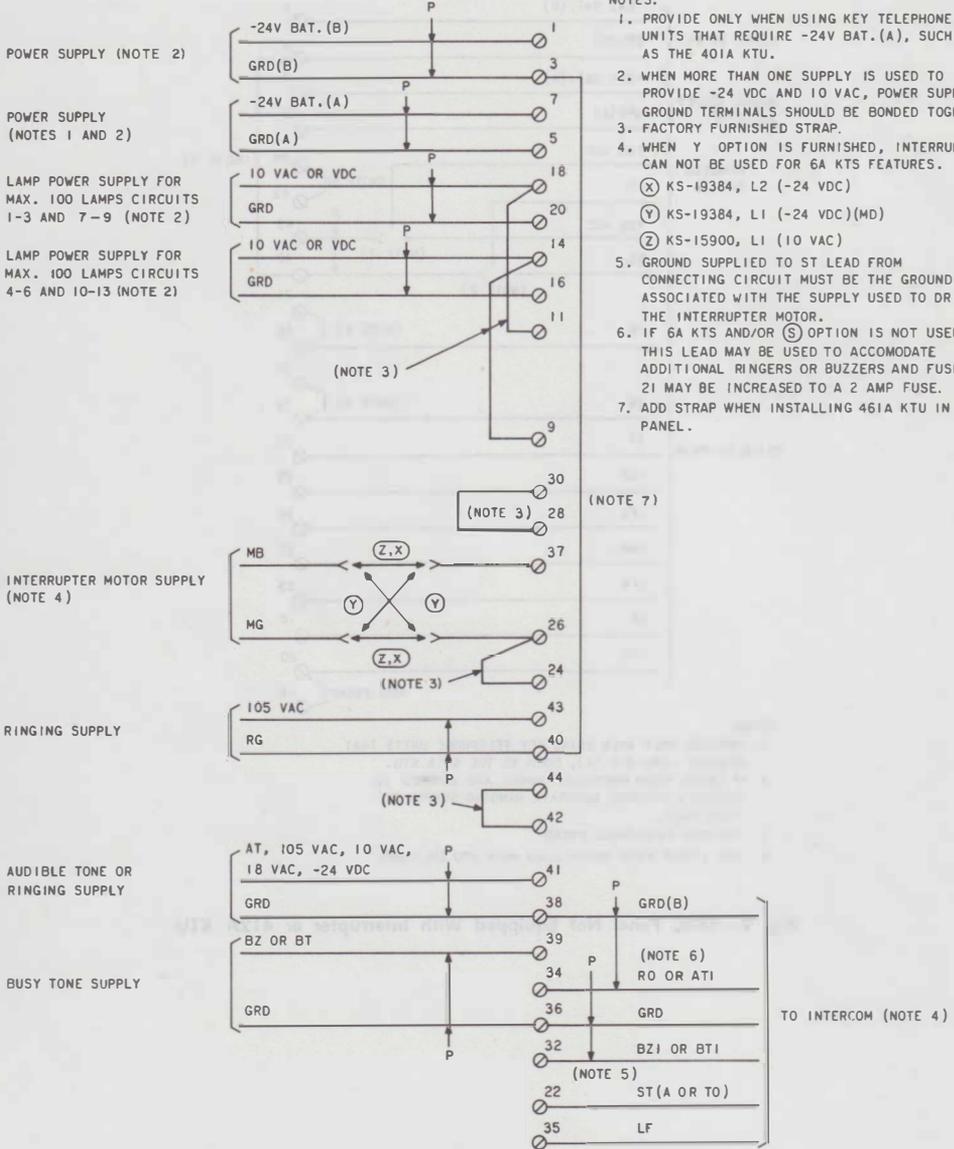
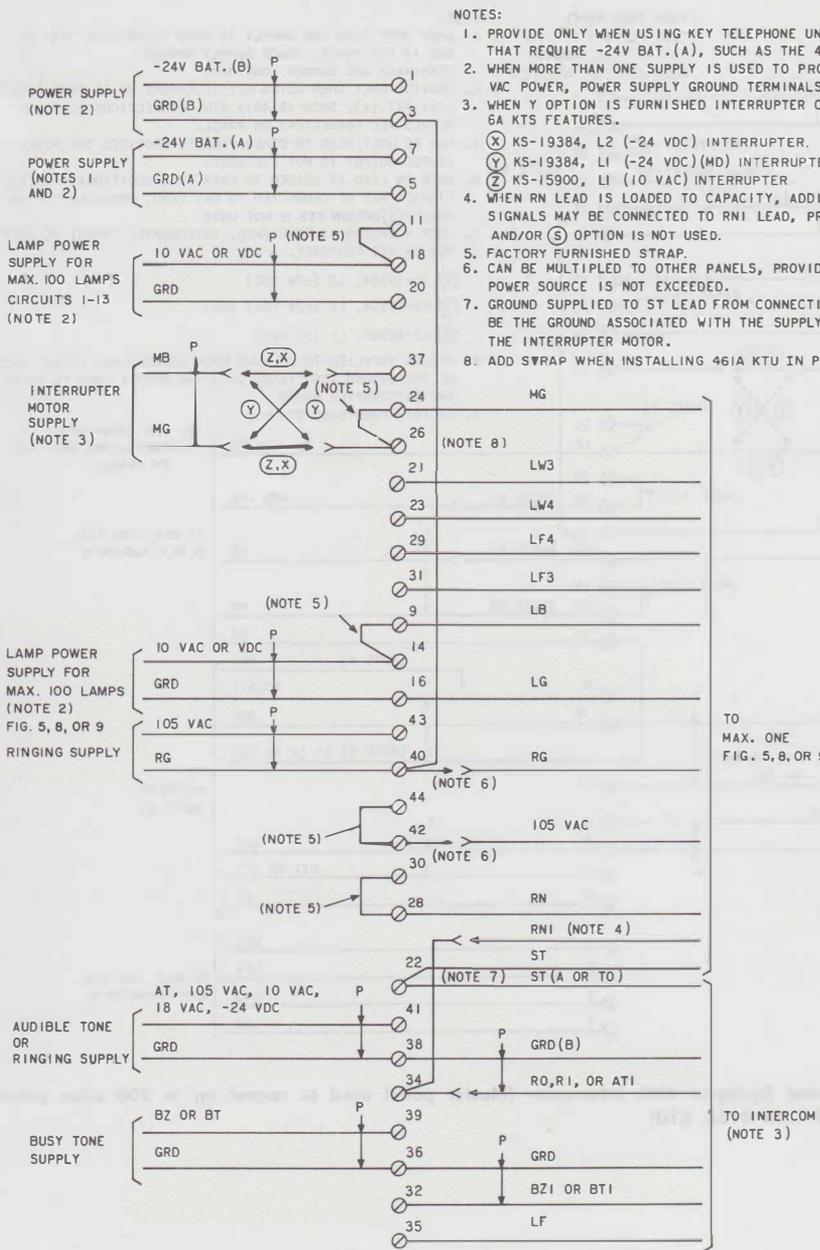


Fig. 10—584C Panel Equipped With Interrupter (Panel not used to control other panels)

584C PANEL WITH INTERRUPTER  
USING PROGRAM C PLUG



- NOTES:
1. PROVIDE ONLY WHEN USING KEY TELEPHONE UNITS THAT REQUIRE -24V BAT.(A), SUCH AS THE 401A KTU.
  2. WHEN MORE THAN ONE SUPPLY IS USED TO PROVIDE -24 VDC AND 10 VAC POWER, POWER SUPPLY GROUND TERMINALS ARE BONDED TOGETHER.
  3. WHEN Y OPTION IS FURNISHED INTERRUPTER CAN NOT BE USED FOR 6A KTS FEATURES.
    - (X) KS-19384, L2 (-24 VDC) INTERRUPTER.
    - (Y) KS-19384, L1 (-24 VDC) (MD) INTERRUPTER
    - (Z) KS-15900, L1 (10 VAC) INTERRUPTER
  4. WHEN RN LEAD IS LOADED TO CAPACITY, ADDITIONAL AUDIBLE SIGNALS MAY BE CONNECTED TO RNI LEAD, PROVIDED THE 6A KTS AND/OR (S) OPTION IS NOT USED.
  5. FACTORY FURNISHED STRAP.
  6. CAN BE MULTIPLIED TO OTHER PANELS, PROVIDED THE OUTPUT OF POWER SOURCE IS NOT EXCEEDED.
  7. GROUND SUPPLIED TO ST LEAD FROM CONNECTING CIRCUIT MUST BE THE GROUND ASSOCIATED WITH THE SUPPLY USED TO DRIVE THE INTERRUPTER MOTOR.
  8. ADD SWRAP WHEN INSTALLING 461A KTU IN PANEL

Fig. 11—584C Panel Equipped With Interrupter (Panel used to control one other panel)

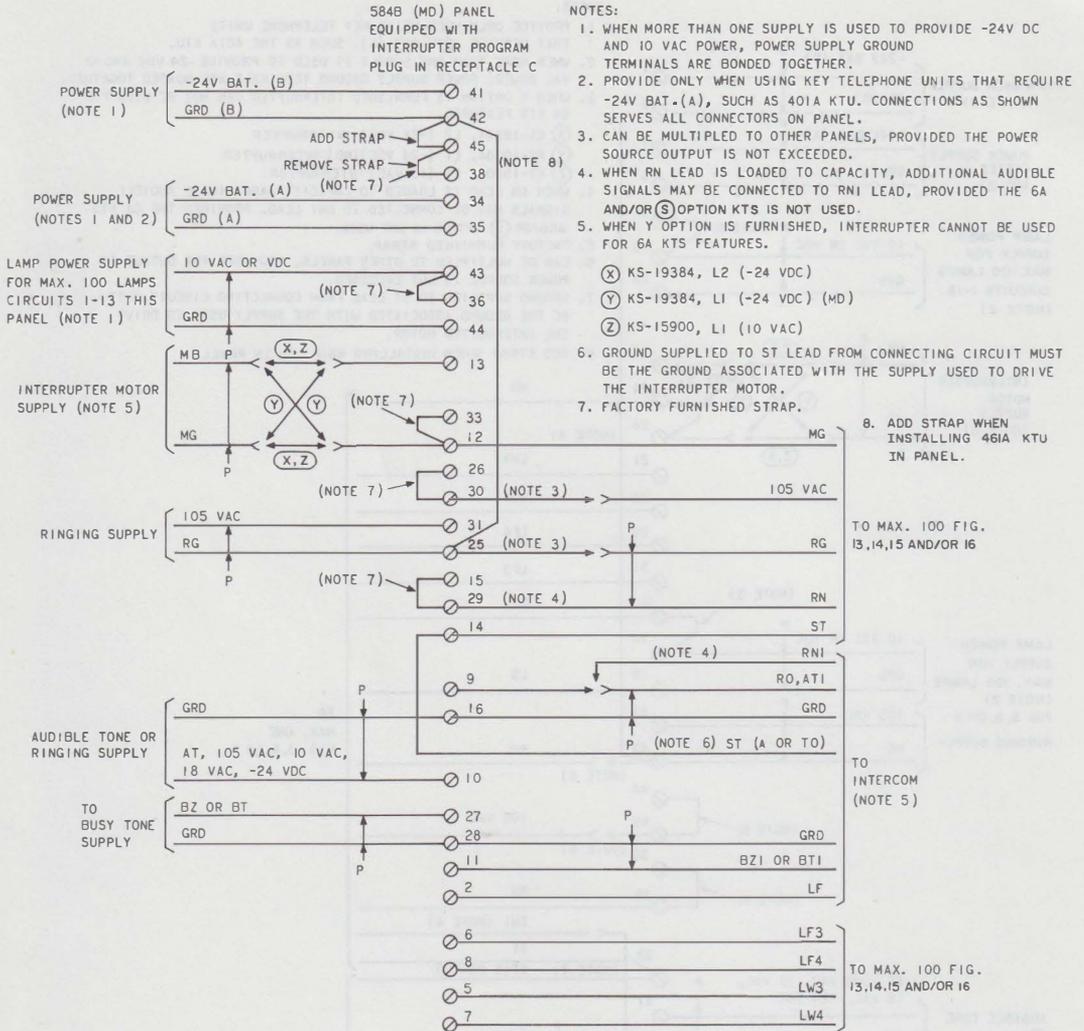


Fig. 12—584B (MD) Panel Equipped With Interrupter (Master panel used to control up to 200 other panels each equipped with 412A KTU)

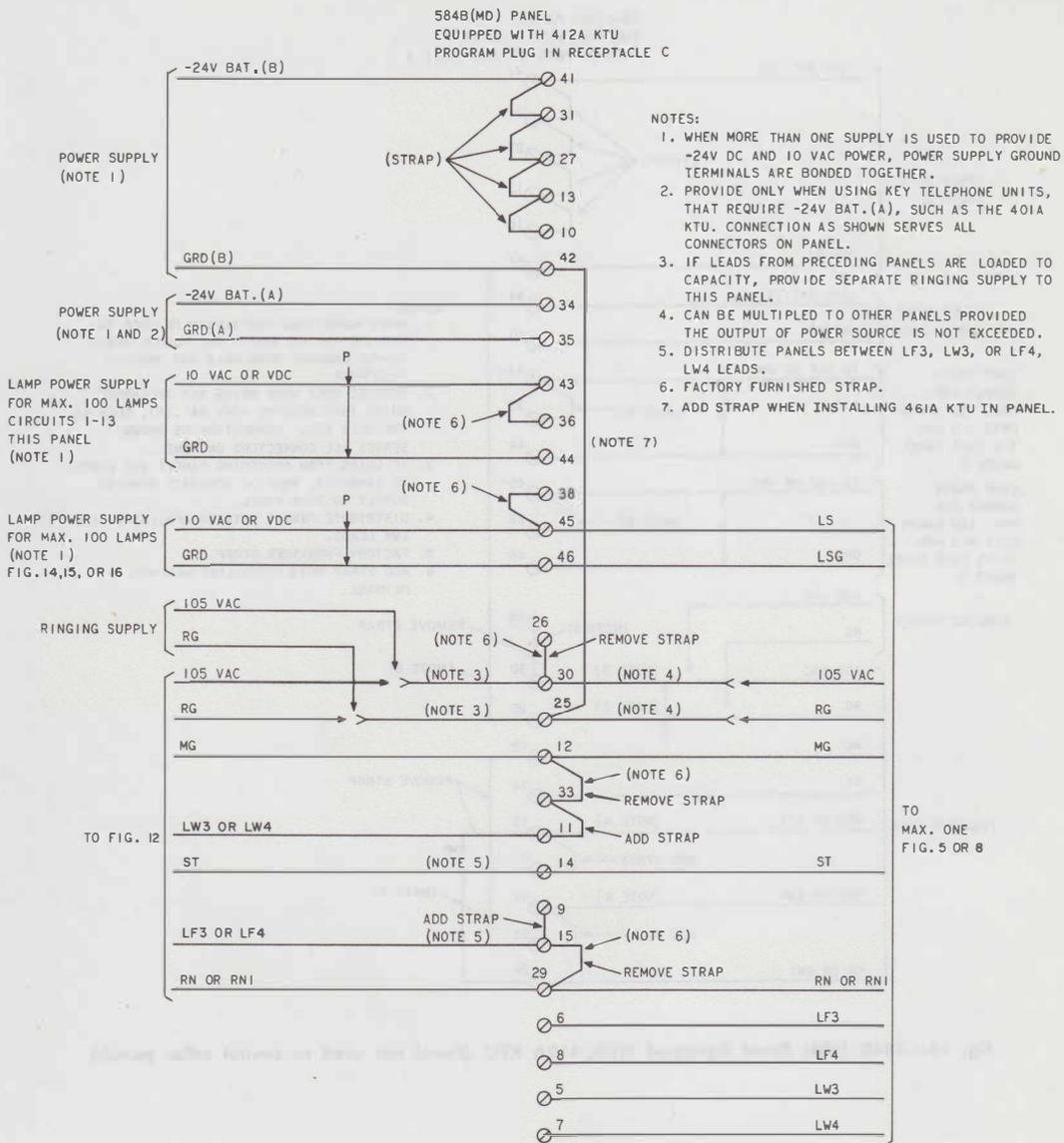


Fig. 13—584B (MD) Panel Equipped With 412A KTU (Panel used to control one other panel)

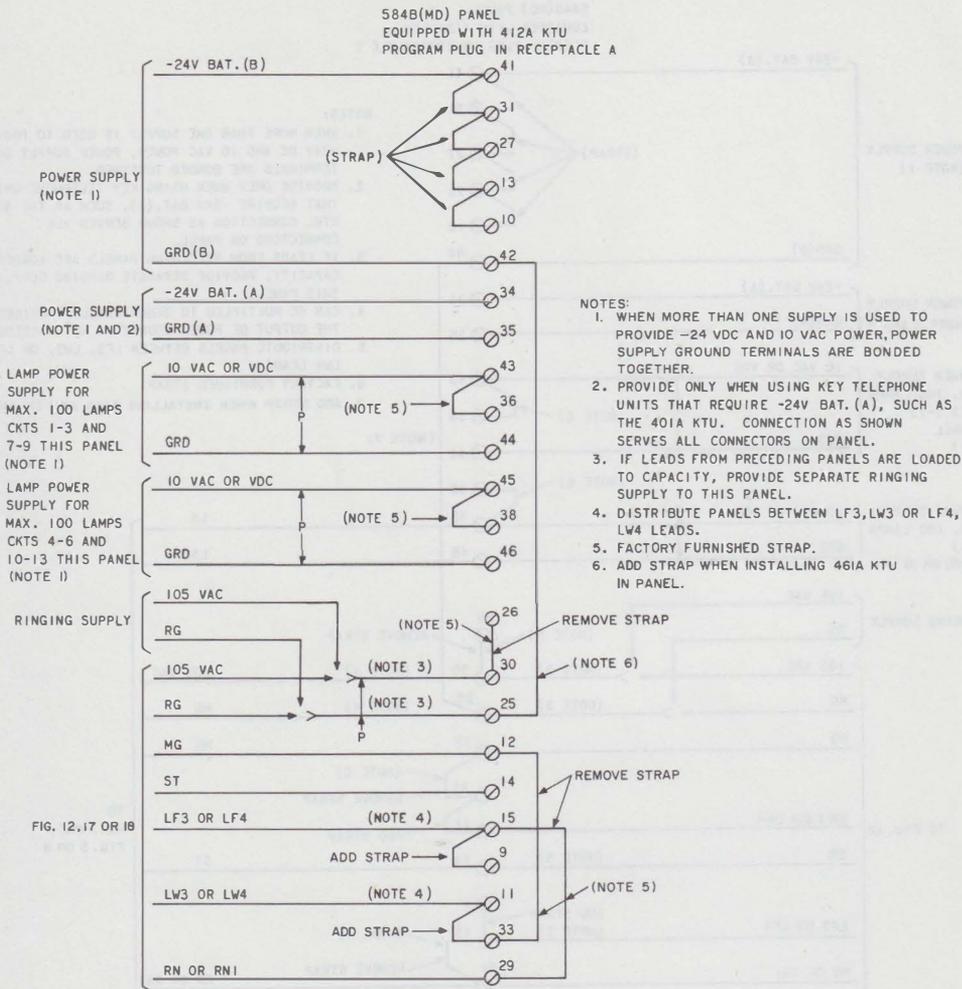
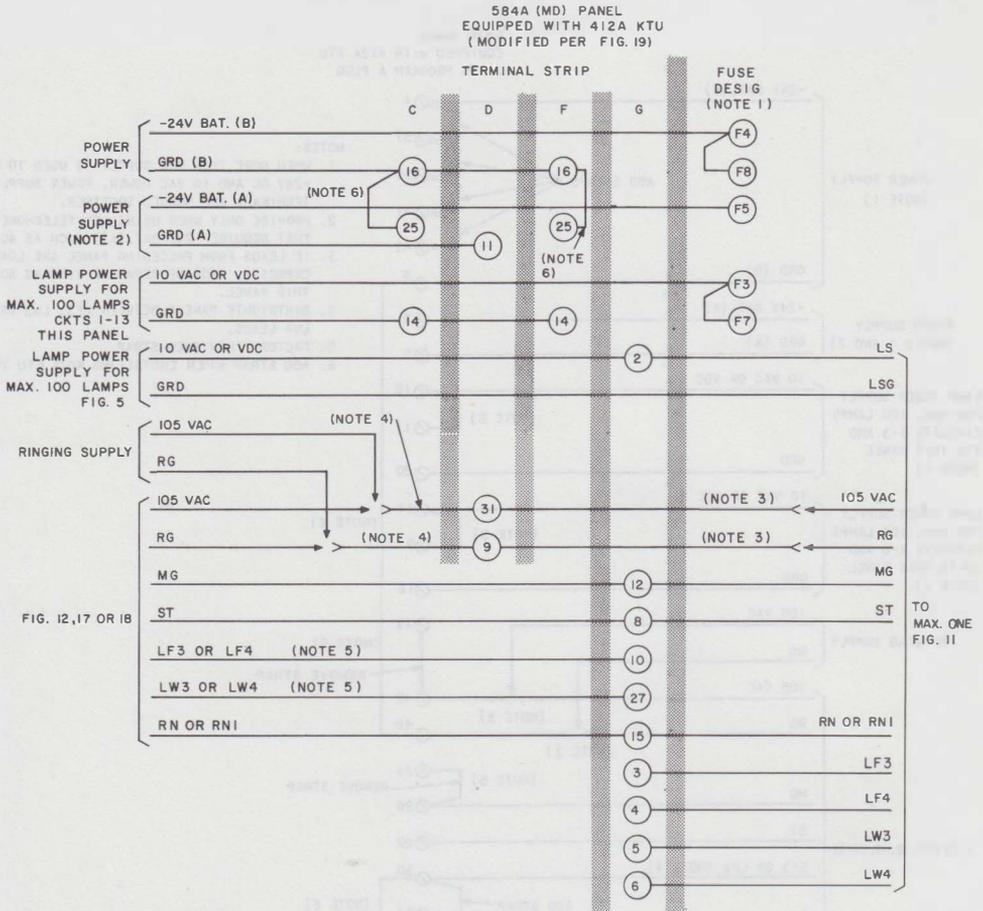


Fig. 14—584B (MD) Panel Equipped With 412A KTU (Panel not used to control other panels)



NOTES:

1. MAKE CONNECTIONS TO TERMINAL 1 OF FUSE.
2. PROVIDE ONLY WHEN USING KEY TELEPHONE UNITS THAT REQUIRE -24V BAT (A), SUCH AS THE 401A KTU. CONNECTION AS SHOWN SERVES CONNECTORS J7 AND J8 (SEE FIG. 20).
3. CAN BE MULTIPLIED TO OTHER PANELS PROVIDED THE OUTPUT OF POWER SOURCE IS NOT EXCEEDED.
4. IF LEADS FROM PRECEEDING PANELS ARE LOADED TO CAPACITY, PROVIDE SEPARATE RINGING SUPPLY TO THIS PANEL.
5. DISTRIBUTE PANELS BETWEEN LF3, LW3 OR LF4, LW4 LEADS.
6. ADD STRAP WHEN INSTALLING 461A KTU IN PANEL.

Fig. 15—584A (MD) Panel Equipped With 412A KTU (Panel used alone and also to control one other panel)

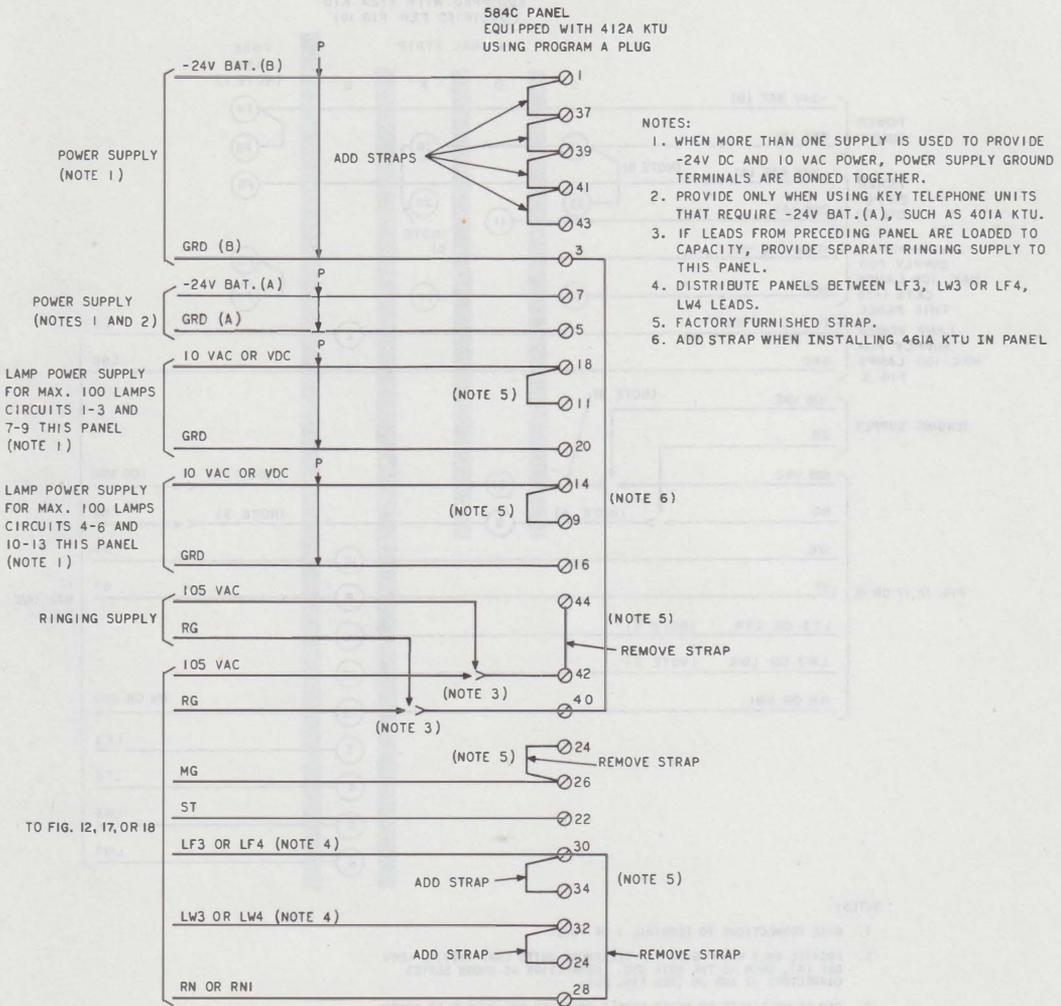


Fig. 16—584C Panel Equipped With 412A KTU (Panel not used to control other panels)

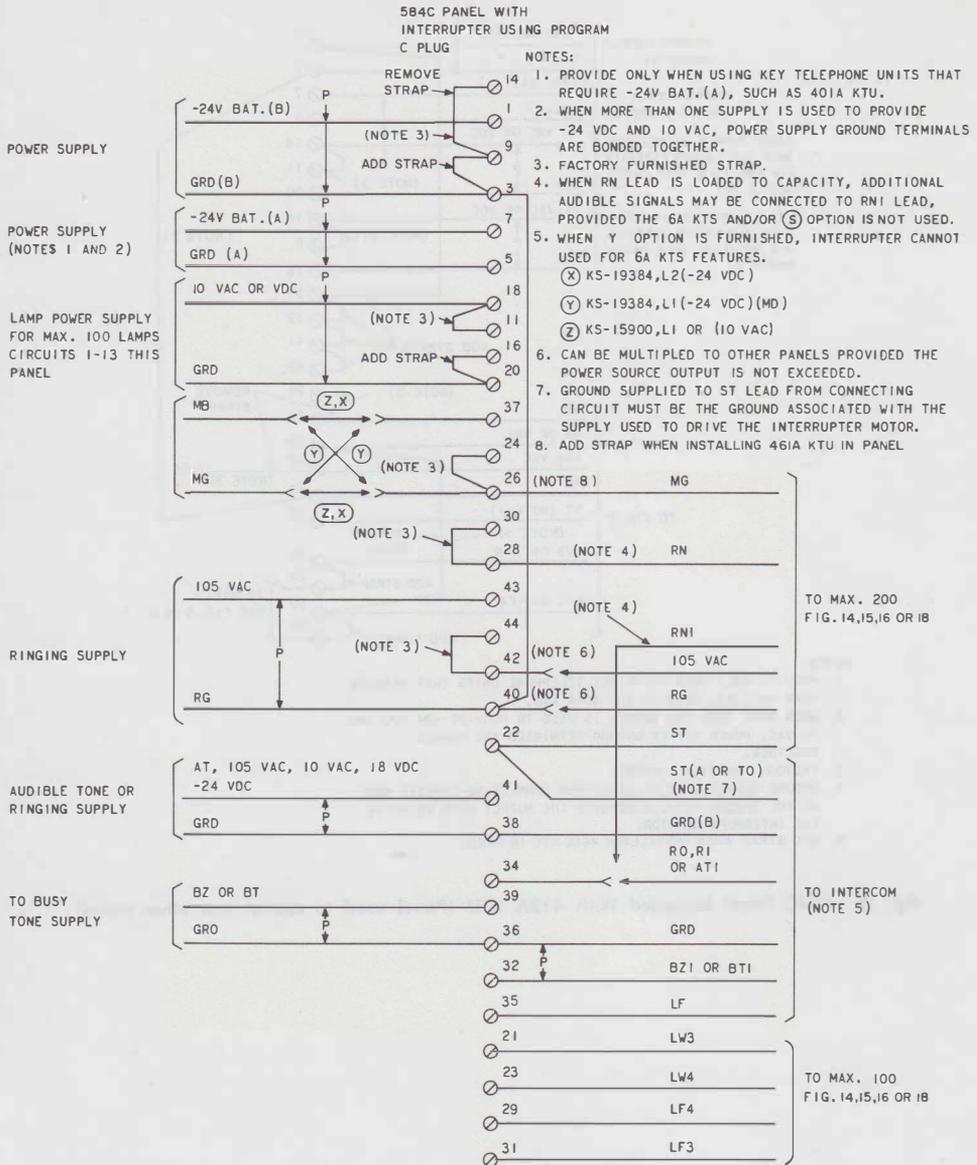
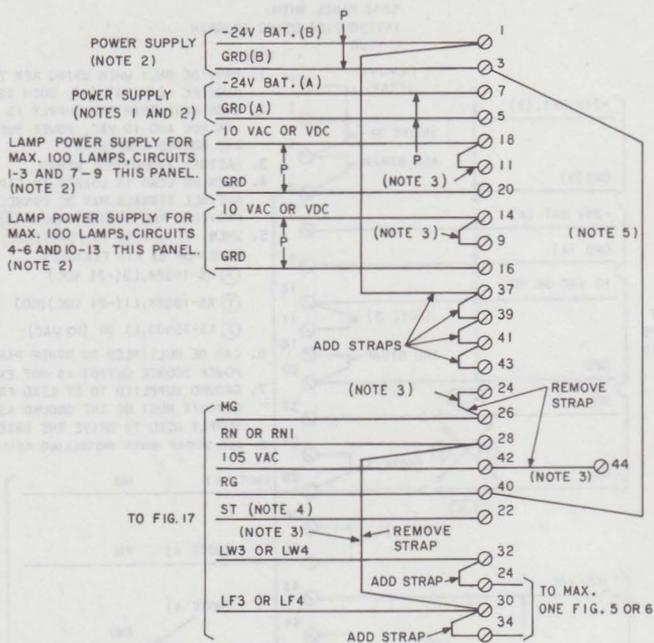


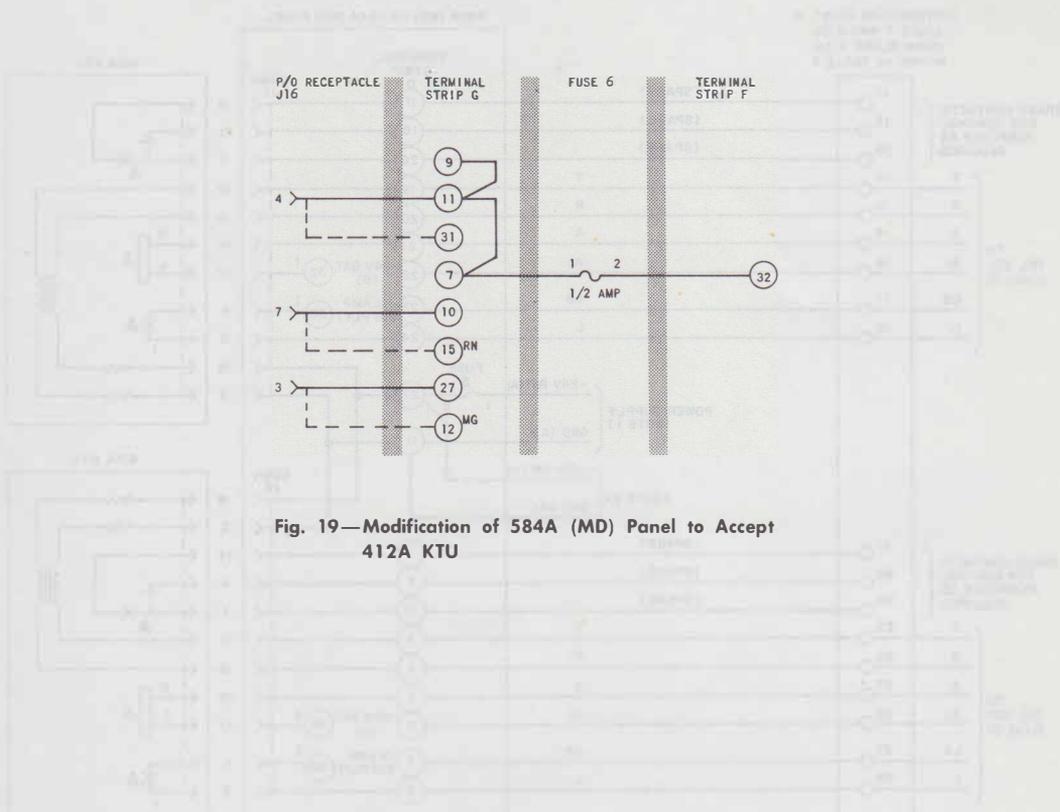
Fig. 17—584C Panel Equipped With Interrupter (Master panel used to control up to 200 other panels each equipped with 412A KTU)



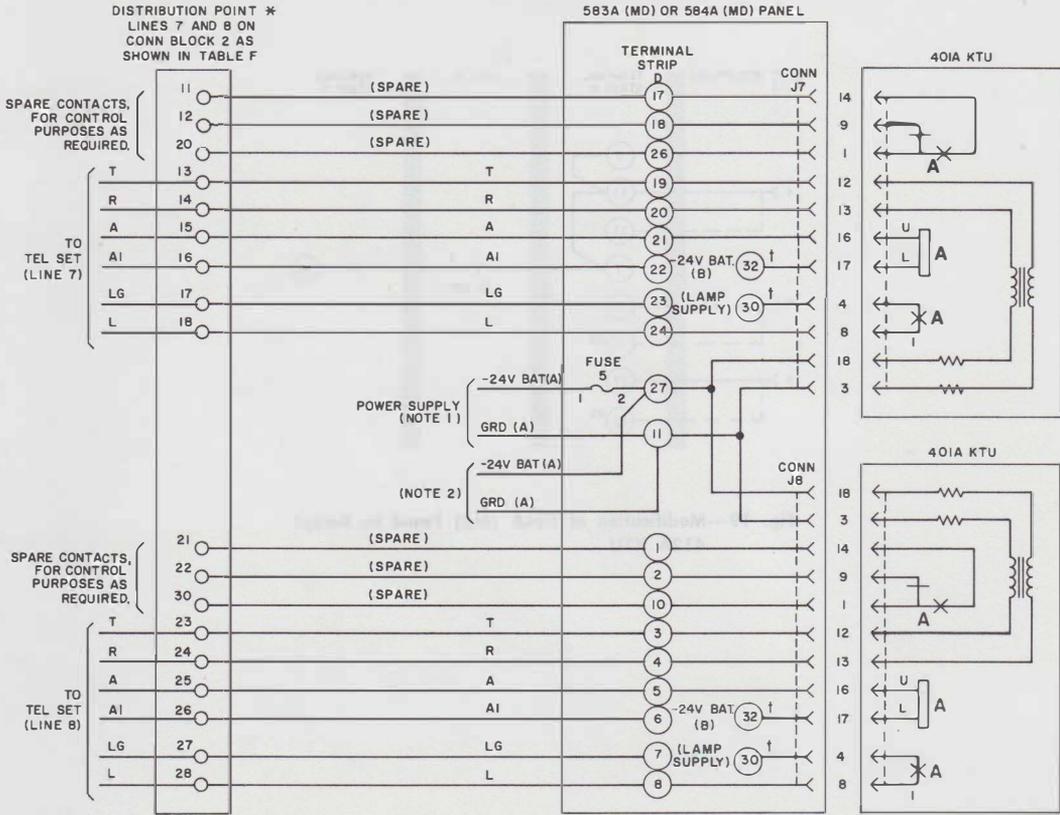
NOTES:

1. PROVIDE ONLY WHEN USING KEY TELEPHONE UNITS THAT REQUIRE -24V BAT. (A), SUCH AS THE 401A KTU.
2. WHEN MORE THAN ONE SUPPLY IS USED TO PROVIDE -24 VOC AND 10 VAC, POWER SUPPLY GROUND TERMINALS ARE BONDED TOGETHER.
3. FACTORY FURNISHED STRAP.
4. GROUND SUPPLIED TO ST LEAD FROM CONNECTING CIRCUIT MUST BE THE GROUND ASSOCIATED WITH THE SUPPLY USED TO ORIVE THE INTERRUPTER MOTOR.
5. ADD STRAP WHEN INSTALLING 461A KTU IN PANEL.

Fig. 18—584C Panel Equipped With 412A KTU (Panel used to control one other panel)



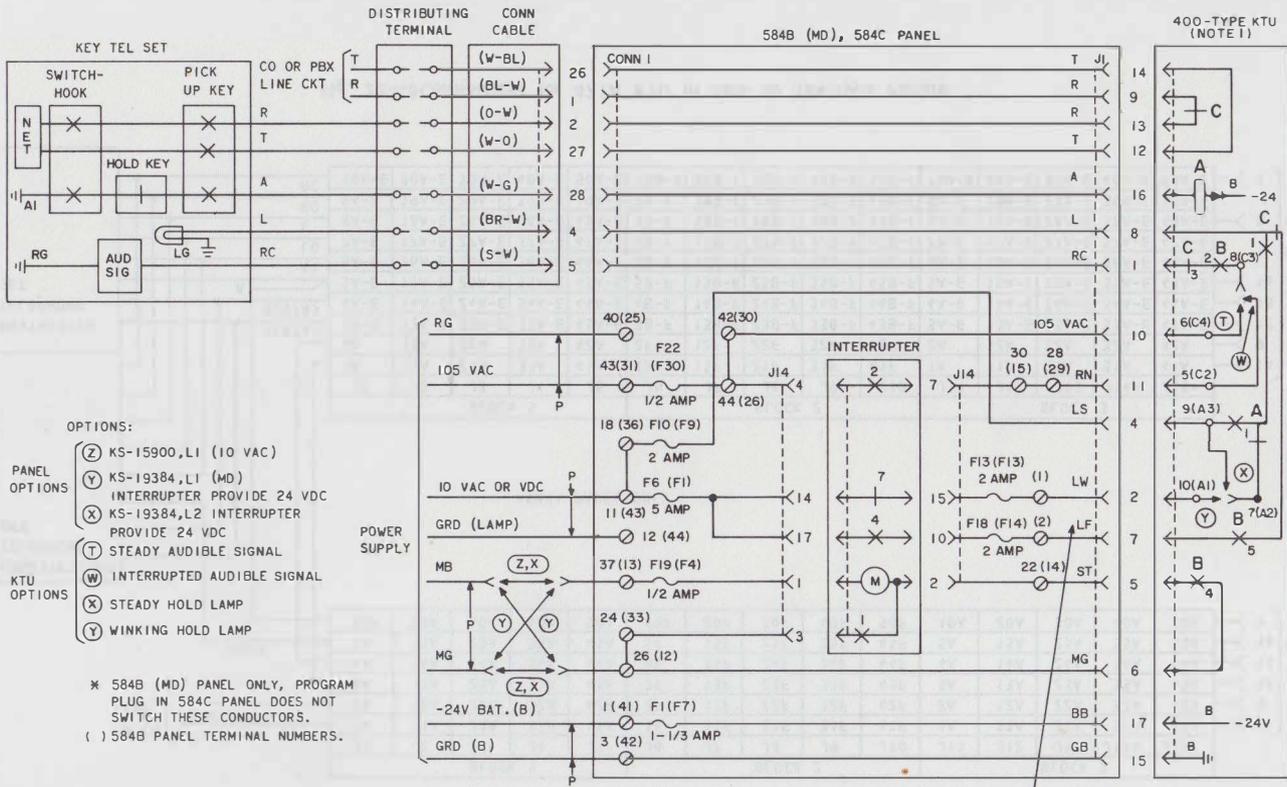
**Fig. 19—Modification of 584A (MD) Panel to Accept 412A KTU**



NOTES:

1. A MAXIMUM OF SIX 401A KTU CAN BE SERVED THROUGH FUSE 5. IF ADDITIONAL 401A KTU ARE REQUIRED, -24V BAT (A) MUST BE SUPPLIED THROUGH A SPARE FUSE.
  2. IF ADDITIONAL 401A KTUS ARE REQUIRED, MULTIPLE TO ANY DESIRED TERMINAL STRIP EXCEPT TERMINAL STRIP G (CONN J13), WITHIN THE LIMITATIONS OF NOTE 1.
- \* A MAXIMUM OF 3 STATION CABLES OR 2 STATION CABLES AND A DISTRIBUTING CABLE CAN CONNECT DIRECTLY TO PANEL.
- † FURNISHED WITH BASIC WIRING OF PANEL. FOR CLARITY, SAME TERMINAL SHOWN TWICE.

Fig. 20—Manual Intercommunication Connections for 583A (MD) and 584A (MD) Panels



OPTIONS:

- PANEL OPTIONS
- (Z) KS-15900, L1 (10 VAC)
  - (Y) KS-19384, L1 (MD) INTERRUPTER PROVIDE 24 VDC
  - (X) KS-19384, L2 INTERRUPTER PROVIDE 24 VDC
  - (T) STEADY AUDIBLE SIGNAL
- KTU OPTIONS
- (W) INTERRUPTED AUDIBLE SIGNAL
  - (X) STEADY HOLD LAMP
  - (Y) WINKING HOLD LAMP

\* 584B (MD) PANEL ONLY, PROGRAM PLUG IN 584C PANEL DOES NOT SWITCH THESE CONDUCTORS.  
 ( ) 584B PANEL TERMINAL NUMBERS.

NOTE:  
 TERMINALS SHOWN WITHOUT PARENTHESIS ARE FOR 400D. THOSE IN PARENTHESIS ARE FOR 400G.

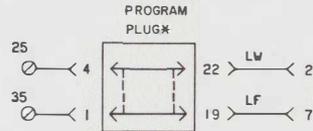


Fig. 21—Typical Functional Layout of 584B (MD) and 584C Panels Showing Circuit 1 Only

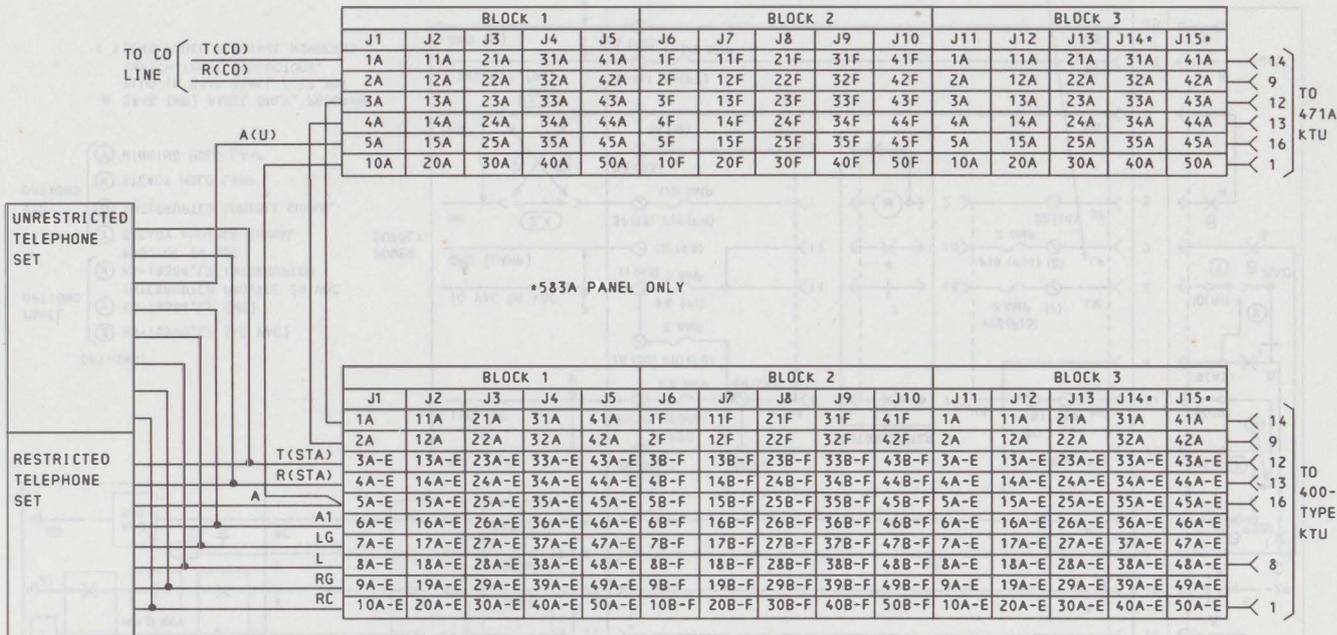


Fig. 22—Connections for 471A KTU in 583- or 584-Type Panel