

SERVICE

1A1 KEY TELEPHONE SYSTEM

KEY SERVICE UNITS

1. GENERAL

1.01 This section contains connection information for the 300-, 301-(MD), 302-(MD), 310-, 311-, 2301-, and 2311-type KSUs.

1.02 Information in this section was formerly contained in Sections 518-240-400, 518-240-401, 518-245-101, and 518-245-102, which are hereby canceled.

1.03 For additional information, refer to CD- and SD-69433-01 (300-, 301-, and 302-type); CD- and SD-69434-01 (310-type); and CD and SD-68480-01 (311-type).

2. CONNECTIONS

2.01 Key and power cable connections and strapping between 202D, 230B, 232B, and 207C KTUs for the 300-, 301-, 302-type KSUs, and for the 310-, 311-type KSUs are shown in Fig. 4 and 5, respectively. Key and power cable connections and strappings between the 230B, 238A, 207C, and 216A for the 310- and 311-type KSUs are shown in Fig. 6.

300-Type Key Service Unit

2.02 KTUs are interwired. Connect key or running cables directly to the screw terminals on back of the KTUs. See Table A for features, lead designations, and connections. When power is not provided, connect an external power source as shown in Table B.

301-Type Key Service Unit

2.03 Connect key or running cables in Columns A through E of 66-type connecting block (Fig. 2). See Table A for features, lead designations, and terminal numbers on connecting blocks A and B.

2.04 When power is not provided, connect an external power source to Column A of connecting block A as shown in Table B.

302-Type Key Service Unit

2.05 An A75A connector cable is connected to 66-Type Connecting block as follows:

- Blue binder (connector 1) to Column A.
- Orange binder (connector 2) to Column B
- Green binder (connector 3) to Column C.

2.06 Each connector provides for:

- All Line features
- Dial intercommunicating line
- Common audible signal for all line circuits.

2.07 See Table C for features, lead designations, and connections to blocks A and B.

2.08 Some pairs in each binder group of the A75A connector cable are not terminated. These pairs may be used for dial intercom codes and miscellaneous circuits by terminating on the proper or vacant terminals on the 66-type connecting block.



These vacant terminals may have wires terminated on Column F that are lying dead at the apparatus end. Make sure that these terminals are cleared before using for miscellaneous circuits.

2.09 A telephone set may be connected to each connector of the A75A connector cable or extended with a B25A connector cable to a bridging adapter or equivalent.

2.10 Fig. 3 shows possible arrangements for intercom signal leads and for extending stations using a 3-way bridging adapter.

2.11 Connect additional key or running cables to Columns D and E of 66-type connecting blocks (see Fig. 2). See Table A for features, lead designations, and connections to terminal numbers on connecting blocks A and B.

2.12 When power is not provided, connect an external power source to Column A of connecting block A (see Table B).

2.13 When key telephone sets are multiplied through bridging adapters with sets furnishing features on a per station basis such as speaker-phone, line exclusion control, cutoff key, push button and buzzers, station busy lamps, etc, certain control leads must be disconnected, insulated, and stored at the bridged station. This is necessary to avoid interference with working circuits. Refer to appropriate section for the telephone set used.

310-Type Key Service Unit

2.14 KTUs are interwired. Connect key or running cables directly to the screw terminals on the back of the KTUs. See the following tables for features, lead designations, and connections.

● Table D, 4 to 7 lines

● Table F, 9 to 13 lines

2.15 When power is not provided, connect an external power source. See the following tables:

● Table E, 4 to 7 lines

● Table G, 9 to 13 lines

311-Type Key Service Unit

2.16 Connect key or running cables, starting on Column A of the 66-type connecting blocks (Fig. 2). See the following tables for features, lead designations, and terminal numbers on connecting blocks.

● Table D, 4 to 7 lines

● Table F, 9 to 13 lines

2.17 When power is not provided, connect an external power source to Column A of connecting block D. See the following tables:

● Table E, 4 to 7 lines

● Table G, 9 to 13 lines

2301- and 2311-Type Key Service Units

2.18 Connections for terminating running and/or key cables and external power wiring to the 66-type connecting blocks are shown in Tables J and K for the 2301- and 2311-type KSUs, respectively. Interwiring of connections between individual KTUs and the connecting blocks is also shown.

2.19 For further information see CDs and SDs 69352-01 and 69361-01 for the 2301- and 2311-type KSUs, respectively.

Signaling Circuit For Manual Intercom

2.20 Fig. 7 shows an arrangement for manual signaling when dial intercom is not provided. This arrangement uses terminals normally used for dial intercom. (See **Read** after 2.08).

Wink-Hold Circuit

2.21 All packages are wired for the wink-hold feature.

Steady Hold

2.22 For steady hold feature see the connection and strapping diagram for the particular KSU.

2.23 Connection Index

Fig. 1—Method of Counting 66B1-25 Connecting Blocks

Fig. 2—Key or Running Cable Terminations on 66-Type Connecting Block For 301-, 302-, and 311-Type KSUs

Fig. 3—Suggested Intercom Signal Connections Using 564HDR or 565HDR Telephone Sets and 302-Type KSU

Fig. 4—300-, 301- and 302-Type KSUs, Connections and Strapping (202D, 230B, 232B, and 207C KTUs)

Fig. 5—310- or 311-Type KSU (4 to 7 Lines) Connections and Strapping (202D, 230B, 232B, and 207C KTUs)

Fig. 6—310- or 311-Type KSU (9 to 13 Lines) Connections and Strapping (230B, 238A, 207C, and 216A KTUs)

Fig. 7—Typical Connections for Manual Signaling When Dial Intercom Circuit is Not Used

Table A—301- and 302-Type KSUs, Connections Between Apparatus and 66-Type Connecting Blocks

Table B—301- and 302-Type KSUs, Connections between Block A of 66-Type Connecting Block, Apparatus, and Power Plant

Table C—302-Type KSU, Connections Between A75A Connector Cable and 66-Type Connecting Blocks

Table D—311-Type KSU (4 - 7 Lines) Connections Between Apparatus and 66-Type Connecting Blocks

Table E—311-Type KSU (4-7 Lines) Connections Between Apparatus, 66-Type Connecting Block, and Power Plant

Table F—311-Type KSU (9-13 Lines) Connections Between Apparatus and 66-Type Connecting Blocks

Table G—311-Type KSU (9-13 Lines) Connections Between Apparatus, 66-Type Connecting Block, and Power Plant

Table H—310- or 311-Type KSU (9 to 13 Lines) Line Circuit Portion of 238A KTU

Table I—310- or 311-Type KSU (9 to 13 Lines) 230B KTU

Table J—2301-Type KSU Connections Between Apparatus and 66-Type Connecting Block

Table K—2311-Type KSU Connections

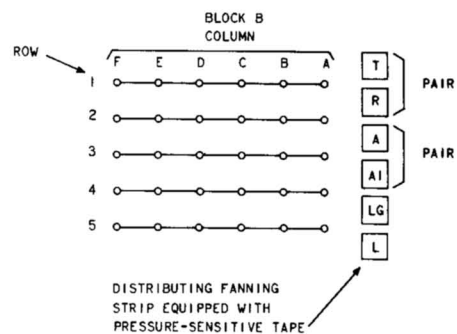
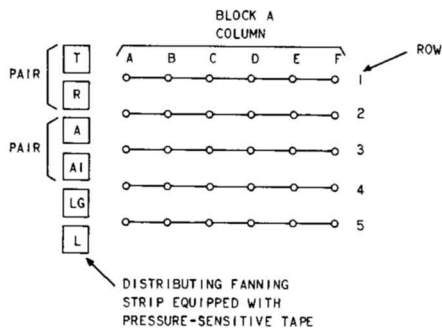


Fig. 1—Method of Counting 66B1-25 Connecting Blocks

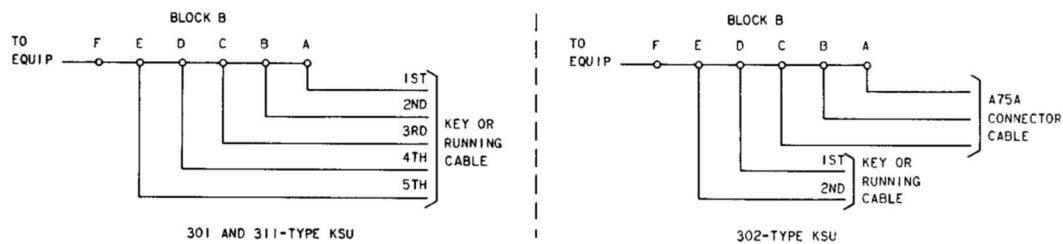


Fig. 2—Key or Running Cable Terminations on 66-Type Connecting Block For 301-, 302-, and 311-Type KSUs

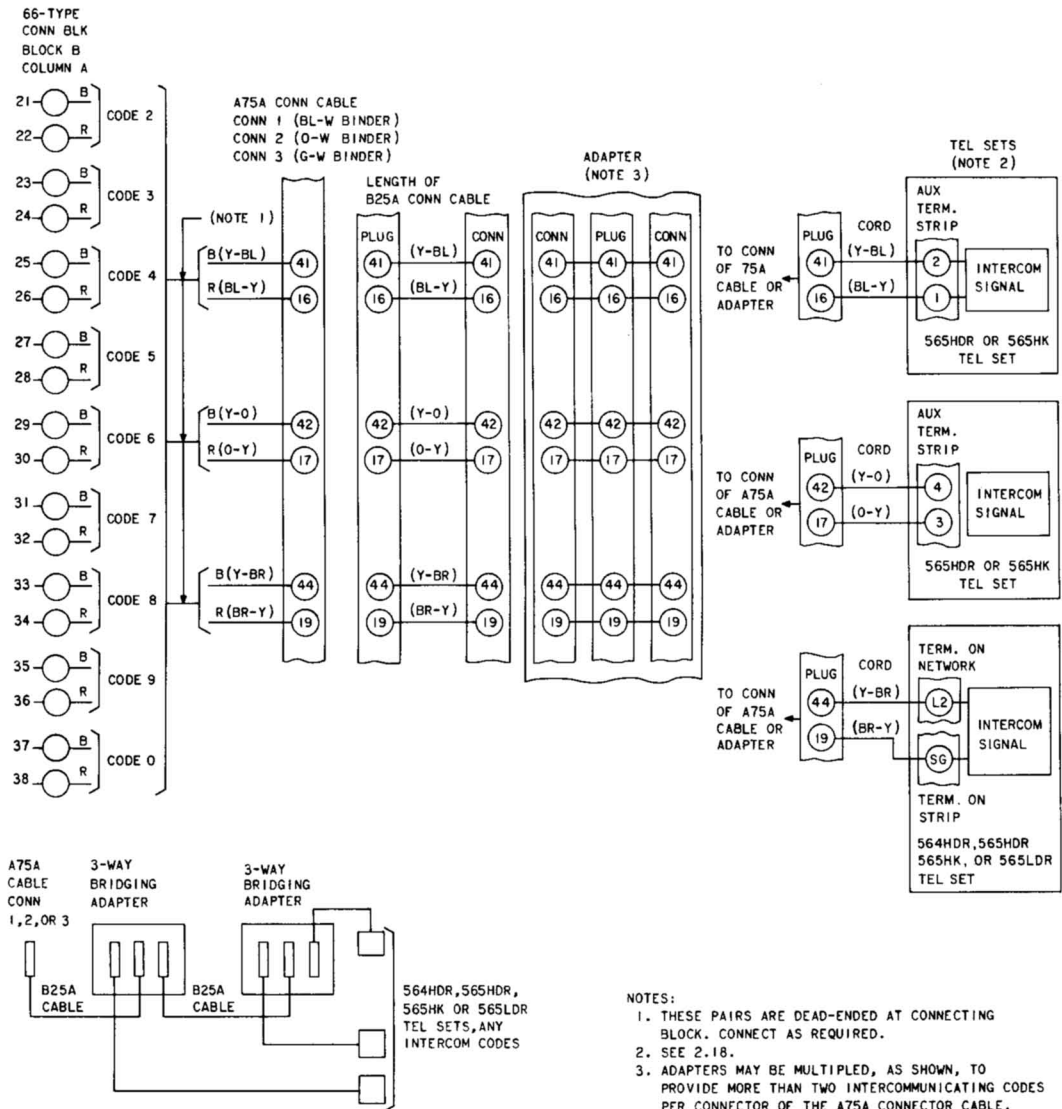


Fig. 3—Suggested Intercom Signal Connections Using 564HDR or 565HDR Telephone Sets, and 302-Type KSU

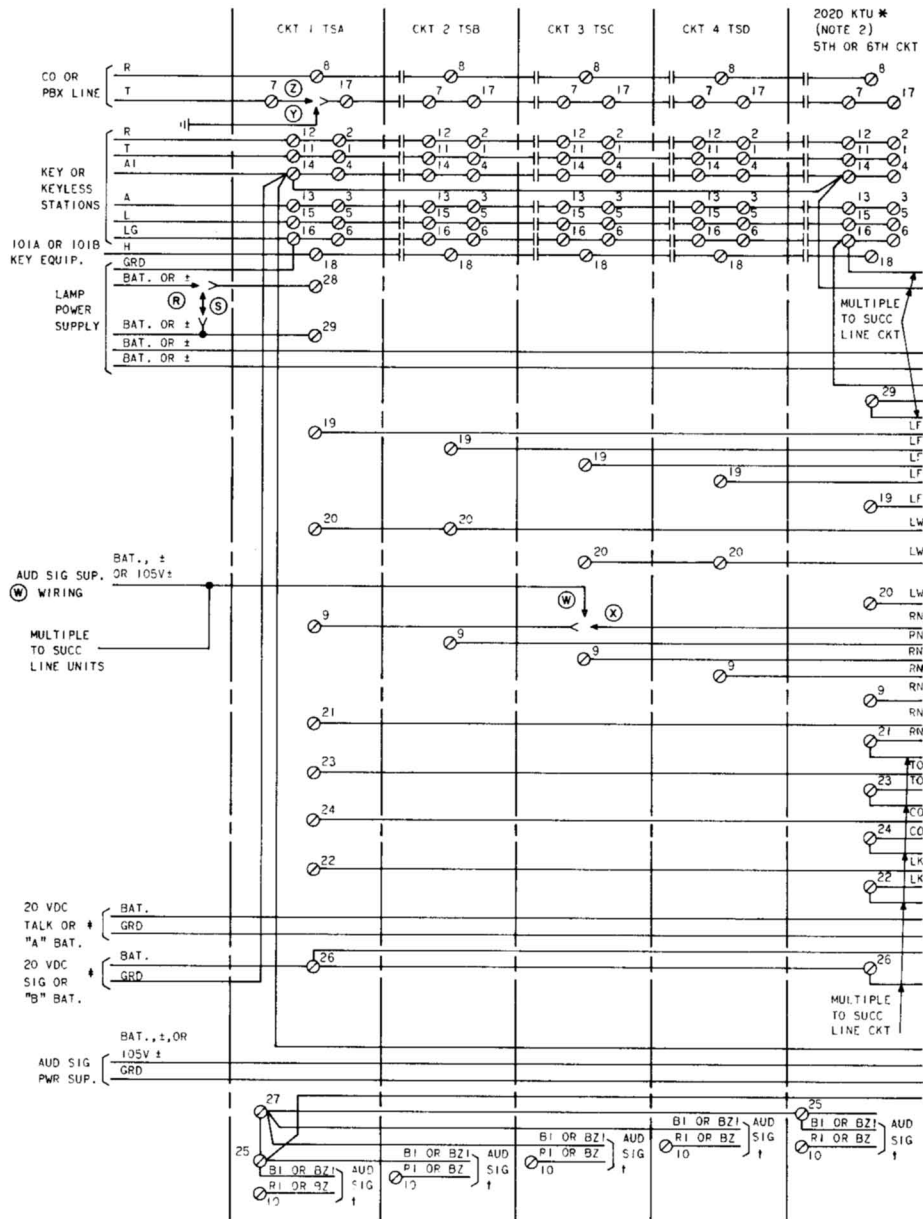
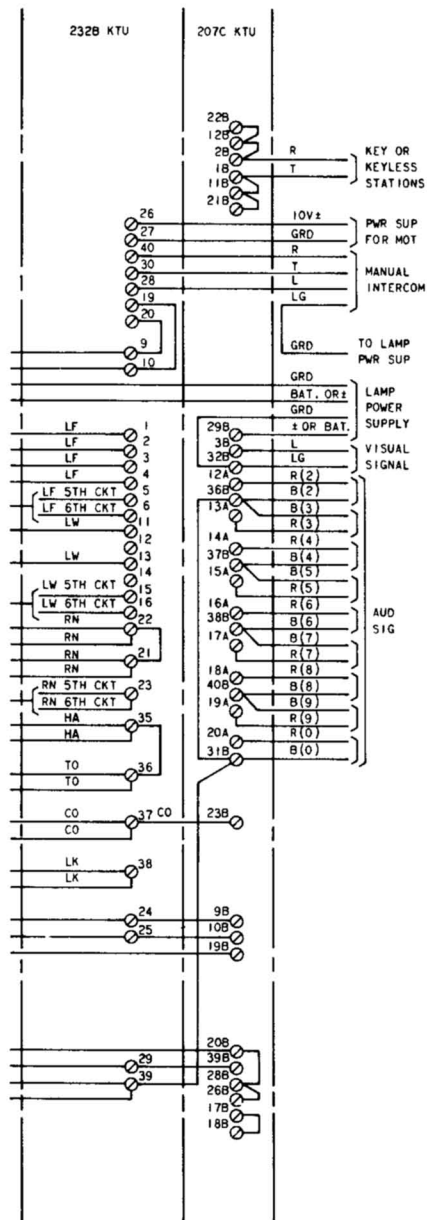


Fig. 4—300-, 301- and 302-Type KSUs, Connections and Strapping (202D, 230D, 232B, and 207C KTUs)
(Sheet 1)



NOTES:

1. WHEN STEADY HOLD LAMP IS REQUIRED INSTEAD OF LAMP WINK, PROVIDE STRAPS AS FOLLOWS:
202D KTU-TERMS. 20 AND 29
230B KTU-CKTS 1 AND 2 TERMS. 20A,B AND 29A
CKTS 3 AND 4 TERMS. 20C,D AND 28A
CAUTION: IF PACKAGE INTERRUPTER IS USED TO FURNISH LAMP WINK FOR OTHER SYSTEMS, DISCONNECT AND TAPE LW LEADS AT TERMINAL 20 OF EACH LINE CIRCUIT NOT USING THE WINK FEATURE.
2. SYMBOL (II) MEANS ADJACENT TERMINALS ARE NOT STRAPPED. REFER TO LEGEND FOR TERMINATIONS.

* WIRED FOR METALLIC RINGING AND INTERRUPTED AUDIBLE

† FOR COMMON AUDIBLE, STRAP ALL NO. 10 TERMINALS

‡ A AND B GROUNDS MUST BE CONNECTED TOGETHER AT POWER SUPPLY

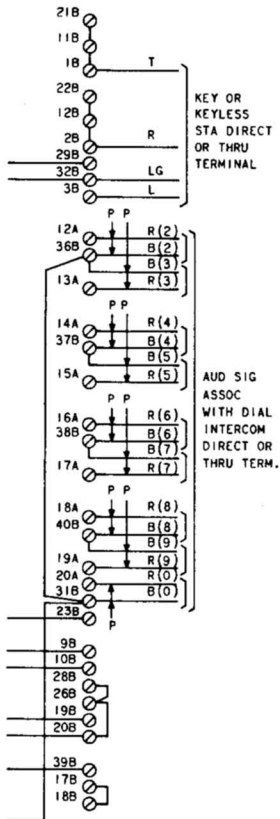
WIRING		OPTION
METALLIC RINGING FURNISHED		Z
GROUNDED RINGING		Y
INTERRUPTED AUDIBLE SIG (FURNISHED)		X
STEADY AUDIBLE SIGNAL		W
LAMP SUPPLY	MAX 40 LAMPS (FURNISHED)	S
	MAX 80 LAMPS	R

Fig. 4—300-, 301- and 302-Type KSUs, Connections and Strapping (202D, 230B, 232B, and 207C KTUs)
(Sheet 2)



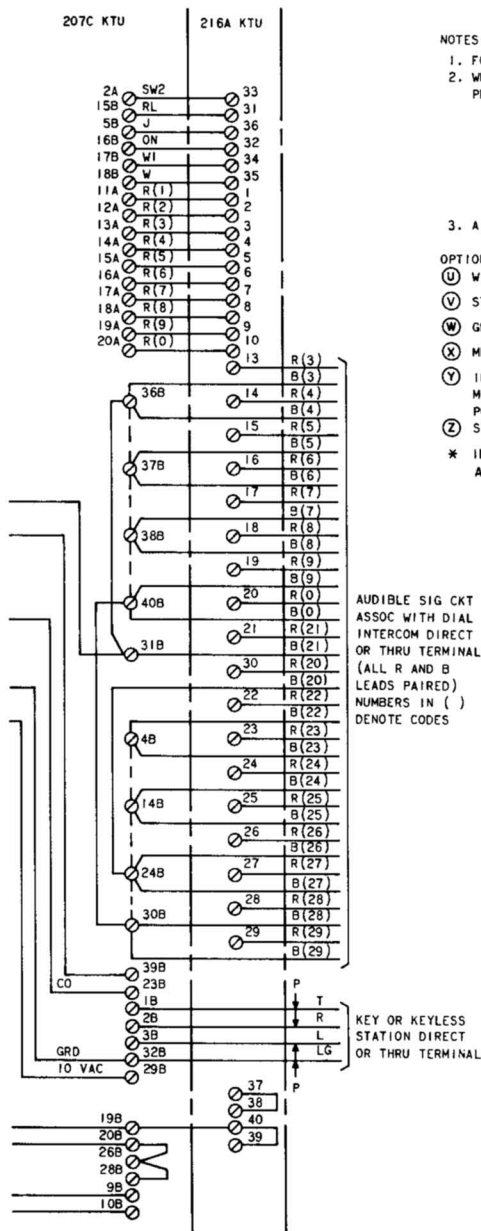
1. FOR COMMON AUDIBLE SIGNAL STRAP ALL NO. 10 TERMS.
2. WHEN STEADY HOLD SIGNAL IS REQUIRED (V OPTION)
PROVIDE STRAPS AS FOLLOWS:
202D KTU-TERM. 20-29
230B KTU-TERM. 20A,B-29A (CKT 1-2)
TERM. 20C,D-28A (CKT 3-4)
3. A AND B GROUNDS MUST BE CONNECTED TOGETHER.

- (U) WINKING HOLD SIGNAL (FURNISHED).
- (V) STEADY HOLD SIGNAL.
- (W) GROUNDED LINE RINGING.
- (X) METALLIC LINE RINGING (FURNISHED).
- (Y) INTERRUPTED AUDIBLE SIGNAL USING ELECTRO-MECHANICAL INTERRUPTER (232B KTU) (FURNISHED).
- (Z) STEADY AUDIBLE SIGNAL



Page 9





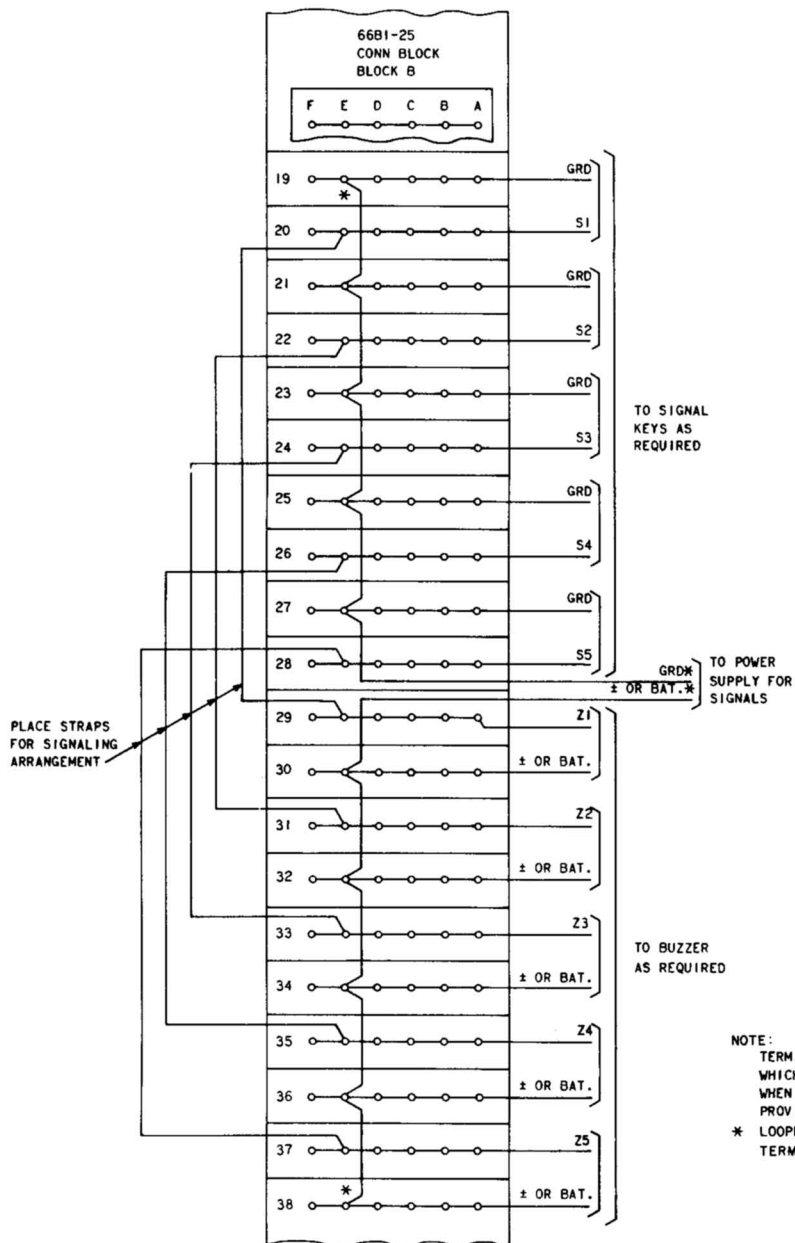


Fig. 7—Typical Connections for Manual Signaling When Dial Intercom Circuit is Not Used

TABLE A

**301- AND 302-TYPE KSU'S, CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS**

FEATURE		LEAD DESIG	BLOCK A 66B1-25 CONN BLK			TERMINAL ON 232B KTU	TERMINAL ON 230B KTU	TERMINAL ON 202D KTU		TERMINAL ON 207C KTU
			ROW	COL	CABLE COLOR O-W BINDER					
Line 1	T	1	F	W-BL		1A				
	R	2		BL-W		2A				
	A	3		W-O		3A				
	A1	4		O-W		4A				
Line 2	LG	5		W-G		6A				
	L	6		G-W		5A				
	T	7		W-BR		1B				
	R	8		BR-W		2B				
Line 3	A	9		W-S		3B				
	A1	10		S-W		4B				
	LG	11		R-BL		6B				
	L	12		BL-R		5B				
Line 4	T	13		R-O		1C				
	R	14		O-R		2C				
	A	15		R-G		3C				
	A1	16		G-R		4C				
Line 5	LG	17		R-BR		6C				
	L	18		BR-R		5C				
	T	19		R-S		1D				
	R	20		S-R		2D				
Line 6	A	21		BK-BL		3D				
	A1	22		BL-BK		4D				
	LG	23		BK-O		6D				
	L	24		O-BK		5D				
Line 7	T	25		BK-G			1	1st		
	R	26		G-BK			2			
	A	27		BK-BR			3			
	A1	28		BR-BK			4			
Line 8	LG	29		BK-S			6	2nd		
	L	30		S-BK			5			
	T	31		Y-BL			1			
	R	32		BL-Y			2			
Line 9	A	33		Y-O			3			
	A1	34		O-Y			4			
	LG	35		Y-G			6			
	L	36		G-Y			5			
Motor Supply	GRD	37								
	10V±	38								
Spare		39								
		40								
Lamp Supply	± or BAT.	41								
	± or BAT.	42								
	GRD	43								
	± or BAT.	44								
Audible Signal Supply	GRD	45								
	BAT., ±, or 105V ±	46								
20v dc Talk or A Bat.	GRD	47								
	BAT.	48								
20v dc Sig or B Bat.	GRD	49								
	BAT.	50								

See Table B
for Power Connections

See Table B
for Power Connections

TABLE A (Cont)

301- AND 302-TYPE KSU'S CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS

FEATURE		LEAD DESIG	BLOCK B 66B1-25 CONN BLK		TERMINAL ON 232B KTU	TERMINAL ON 230B KTU	TERMINAL ON 202D KTU		TERMINAL ON 207C KTU
			ROW	COL					
Manual Intercom Line	T	1	↑ 						

* On the 302 KSU the R1 leads and the B1 leads are factory-strapped.

TABLE B

**301- AND 302-TYPE KSU'S, CONNECTIONS BETWEEN BLOCK A
OF 66-TYPE CONNECTING BLOCK, APPARATUS, AND POWER PLANT**

FEATURE	LEAD DESIG	CONNECTING BLOCK A															
		ROW ON 66B1-25 CONN BLOCK	COL F			COL E			COL D			COL C			COL A		
			CABLE COLOR CODE	TO		CABLE COLOR CODE	TO		CABLE COLOR CODE	TO		CABLE COLOR CODE	TO		CABLE COLOR CODE	TO	
				KTU	TERM.		KTU	TERM.		KTU	TERM.		KTU	TERM.		KTU	TERM.
Motor Supply	GRD 10V ±	37 38	Y-BR BR-Y	232B	27 26										BL2Y BL1Y	10V AC	G B
Spare																	
Lamp Supply	± or BAT.	41	BR*	232B	9	BR-W*	1st 202D	29							W	10V AC	B†
	± or BAT.	42	S*	232B	10	S-W*								R-W	B†		
	GRD ± or BAT.	43 44	BL-W† BL†	230B 230B	6A 28A	O-W† O†	230B 230B	16A 29A	G-W† G†	207C 207C	32B 29B	Y-W† Y†	1st 202D	16	R-Y R		G B†
Audible Signal Supply	GRD ±, BAT., or 105V ±	45 46	V-G G-V	232B	39 29												
20v dc Talk or A Bat.	GRD	47	V-BR	232B	25										G2Y	20V DC	G
	BAT.	48	BR-V		24										G1Y	DC Talk	B
20v dc Sig or B Bat.	GRD	49	V-S	230B	4A										S2BK	20V DC	G
	BAT.	50	S-V		26A										S1BK	DC Sig	B

* 18 Gauge — G-W Binder.

† 20 Gauge — G-W Binder.

‡ Use loop through method of termination for terminals 41, 42, and 43.

TABLE C

**302-TYPE KSU, CONNECTIONS BETWEEN
A75A CONNECTOR CABLE AND 66-TYPE CONNECTING BLOCKS**

FEATURE	LEAD DESIG	CONN 1						CONN 2						CONN 3					
		CONN 1 BL-W BINDER		TERMINATION ON 66-TYPE CONN BLOCK				CONN 2 O-W BINDER		TERMINATION ON 66-TYPE CONN BLOCK				CONN 3 G-W BINDER		TERMINATION ON 66-TYPE CONN BLOCK			
		PIN NO.	CABLE COLOR	ROW	BLK	COL		PIN NO.	CABLE COLOR	ROW	BLK	COL		PIN NO.	CABLE COLOR	ROW	BLK	COL	
Line 1	T	26	W-BL	1				26	W-BL	1				26	W-BL	1			
	R	1	BL-W	2				27	BL-W	2				27	BL-W	2			
	A	27	W-O	3				27	W-O	3				27	W-O	3			
	A1	2	O-W	4				2	O-W	4				2	O-W	4			
Line 2	LG	28	W-G	5				28	W-G	5				28	W-G	5			
	L	3	G-W	6				3	G-W	6				3	G-W	6			
	T	29	W-BR	7				29	W-BR	7				29	W-BR	7			
	R	4	BR-W	8				4	BR-W	8				4	BR-W	8			
Line 3	A	30	W-S	9				30	W-S	9				30	W-S	9			
	A1	5	S-W	10				5	S-W	10				5	S-W	10			
	LG	31	R-BL	11				31	R-BL	11				31	R-BL	11			
	L	6	BL-R	12				6	BL-R	12				6	BL-R	12			
Line 4	T	32	R-O	13				32	R-O	13				32	R-O	13			
	R	7	O-R	14				7	O-R	14				7	O-R	14			
	A	33	R-G	15				33	R-G	15				33	R-G	15			
	A1	8	G-R	16				8	G-R	16				8	G-R	16			
Line 5	LG	34	R-BR	17				34	R-BR	17				34	R-BR	17			
	L	9	BR-R	18				9	BR-R	18				9	BR-R	18			
	T	35	R-S	19				35	R-S	19				35	R-S	19			
	R	10	S-R	20				10	S-R	20				10	S-R	20			
Line 6	A	36	BK-BL	21				36	BK-BL	21				36	BK-BL	21			
	A1	11	BL-BK	22				11	BL-BK	22				11	BL-BK	22			
	LG	37	BK-O	23				37	BK-O	23				37	BK-O	23			
	L	12	O-BK	24				12	O-BK	24				12	O-BK	24			
Dial Inter-com	T	38	BK-G	17				38	BK-G	17				38	BK-G	17			
	R	13	G-BK	18				13	G-BK	18				13	G-BK	18			
Spare*		39	BK-BR					39	BK-BR					39	BK-BR				
		14	BR-BK					14	BR-BK					14	BR-BK				
Dial Inter-com	LG	40	BK-S	19				40	BK-S	19				40	BK-S	19			
	L	15	S-BK	20				15	S-BK	20				15	S-BK	20			
Spare*		41	Y-BL					41	Y-BL					41	Y-BL				
		16	BL-Y					16	BL-Y					16	BL-Y				
		42	Y-O					42	Y-O					42	Y-O				
		17	O-Y					17	O-Y					17	O-Y				
Spare*		43	Y-G					43	Y-G					43	Y-G				
		18	G-Y					18	G-Y					18	G-Y				
		44	Y-BR					44	Y-BR					44	Y-BR				
		19	BR-Y					19	BR-Y					19	BR-Y				
Com Aud	B1 or BZ1	45	Y-S	5				45	Y-S	7				45	Y-S	9			
	R1 or BZ	20	S-Y	6				20	S-Y	8				20	S-Y	10			
Spare*		46	V-BL					46	V-BL					46	V-BL				
		21	BL-V					21	BL-V					21	BL-V				
		47	V-O					47	V-O					47	V-O				
		22	O-V					22	O-V					22	O-V				
		48	V-G					48	V-G					48	V-G				
		23	G-V					23	G-V					23	G-V				
Spare*		49	V-BR					49	V-BR					49	V-BR				
		24	BR-V					24	BR-V					24	BR-V				
		50	V-S					50	V-S					50	V-S				
		25	S-V					25	S-V					25	S-V				

* Dead-ended and stored at connecting blocks. Connect as required.

TABLE D

**311-TYPE KSU (4-7 LINES) CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS**

FEATURE	LEAD DESIGNATION	BLOCK A 66-TYPE CONNECTING BLOCK			TERMINAL ON 232B KTU	TERMINAL ON 230B KTU	TERMINAL ON 202D KTU		TERMINAL ON 207C KTU
		ROW	COL	CABLE COLOR BLUE BINDER					
Line 1	T	1	F	W-BL		1A			
	R	2		BL-W		2A			
	A	3		W-O		3A			
	A1	4		O-W		4A			
Line 2	LG	5		W-G		6A			
	L	6		G-W		5A			
Line 3	T	7		W-BR		1B			
	R	8		BR-W		2B			
	A	9		W-S		3B			
	A1	10		S-W		4B			
Line 4	LG	11		R-BL		6B			
	L	12		BL-R		5B			
Line 5	T	13		R-O		1C			
	R	14		O-R		2C			
	A	15		R-G		3C			
	A1	16		G-R		4C			
Line 6	LG	17		R-BR		6C			
	L	18		BR-R		5C			
Line 7	T	19		R-S		1D			
	R	20		S-R		2D			
Line 8	A	21		BK-BL		3D			
	A1	22		BL-BK		4D			
Line 9	LG	23		BK-O		6D			
	L	24		O-BK		5D			
Line 10	T	25		BK-G			1	1st	
	R	26		G-BK			2		
	A	27		BK-BR			3		
	A1	28		BR-BK			4		
Line 11	LG	29		BK-S			6	2nd	
	L	30		S-BK			5		
Line 12	T	31		Y-BL			1	3rd	
	R	32		BL-Y			2		
Line 13	A	33		Y-O			3		
	A1	34		O-Y			4		
Line 14	LG	35		Y-G			6	3rd	
	L	36		G-Y			5		
Line 15	T	37		Y-BR			1	3rd	
	R	38		BR-Y			2		
Line 16	A	39		Y-S			3		
	A1	40		S-Y			4		
Line 17	LG	41		V-BL			6	3rd	
	L	42		BL-V			5		
Manual Intercom	T	43		V-O	30				
	R	44		O-V	40				
Line 18	LG	45		V-G	27				
	L	46		G-V	28				
Dial Intercom	T	47		V-BR				1B 2B 3B	
	R	48		BR-V					
	LG	49		V-S					
	L	50		S-V					

TABLE D (Cont)

311-TYPE KSU (4-7 LINES) CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS

FEATURE	LEAD DESIGNATION	BLOCK B 66-TYPE CONNECTING BLOCK			TERMINAL ON 232B KTU	TERMINAL ON 230B KTU	TERMINAL ON 202D KTU		TERMINAL ON 207C KTU
		ROW	COL	CABLE COLOR ORANGE BINDER					
Aud Sig Assoc With Dial Intercom	Code 2	B R	1 2	F	W-BL BL-W				36B 12A
	3	B R	3 4		W-O O-W				36B 13A
	4	B R	5 6		W-G G-W				37B 14A
	5	B R	7 8		W-BR BR-W				37B 15A
	6	B R	9 10		W-S S-W				38B 16A
	7	B R	11 12		R-BL BL-R				38B 17A
	8	B R	13 14		R-O O-R				40B 18A
	9	B R	15 16		R-G G-R				40B 19A
	0	B R	17 18		R-BR BR-R				31B 20A
Aud Sig Assoc With Line Ckts	Line 1	B1 or BZ1 R1 or BZ	19 20		R-S S-R	25A 10A			
	Line 2	B1 or BZ1 R1 or BZ	21 22		BK-BL BL-BK	25A 10B			
	Line 3	B1 or BZ1 R1 or BZ	23 24		BK-O O-BK	27A 10C			
	Line 4	B1 or BZ1 R1 or BZ	25 26		BK-G G-BK	30A 10D			
	Line 5	B1 or BZ1 R1 or BZ	27 28		BK-BR BR-BK		25 10	1st	
	Line 6	B1 or BZ1 R1 or BZ	29 30		BK-S S-BK		25 10	2nd	
	Line 7	B1 or BZ1 R1 or BZ	31 32		Y-BL BL-Y		25 10	3rd	
Vacant			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						
			46						
			47						
			48						
			49						
			50						

TABLE D (Cont)

**311-TYPE KSU (4-7 LINES) CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS**

FEATURE		LEAD DESIGNATION	BLOCK D 66-TYPE CONNECTING BLOCK			TERMINAL ON 230B KTU	TERMINAL ON 202D KTU	
			ROW	COL	CABLE COLOR ORANGE BINDER			
Co or PBX Lines	Line 1	T R	1 2	F	Y-O O-Y	7A 8A		
	Line 2	T R	3 4		Y-G G-Y	7B 8B		
	Line 3	T R	5 6		Y-BR BR-Y	7C 8C		
	Line 4	T R	7 8		Y-S S-Y	7D 8D		
	Line 5	T R	9 10		V-BL BL-V		7 8	1st
	Line 6	T R	11 12		V-O O-V		7 8	2nd
	Line 7	T R	13 14		V-G G-V		7 8	3rd
	Spare		15 16		V-BR BR-V			
			17 18		V-S S-V			
			19 20					
			21 22					
	Vacant		23 24					
			25 26					
			27 28					
			29 30					
			31 32					
			33 34					
			35 36					
	See Table E For Power Connections		37 38					
			39 40					
			41 42					
			43 44					
			45 46					
			47 48					
			49 50					

TABLE E

**311-TYPE KSU (4-7 LINES) CONNECTIONS BETWEEN APPARATUS,
66-TYPE CONNECTING BLOCK, AND POWER PLANT**

FEATURE	LEAD DESIG	CONNECTING BLOCK D												
		ROW ON 66-TYPE CONN BLOCK	COL F			COL E			COL D			COL A		
			CABLE COLOR BR-W BNDR	TO		CABLE COLOR BR-W BNDR	TO		CABLE COLOR BR-W BNDR	TO		CABLE COLOR	TO	
				KTU	TERMINAL		KTU	TERMINAL		KTU	TERMINAL		J86731-D POWER PLANT	
Audible Signal Power Supply	GRD	37	W-BL		39									
	±, BAT., or 105V ±	38	BL-W	232B	29									
20v dc Talk or A Bat.	GRD	39	W-O		25							G-2Y	20V DC	G
	BAT.	40	O-W	232B	24							G-1Y	Talk	B
20v dc Signal or B Bat.	GRD	41	R-BR	1st 202D	4							BL-2Y	20V DC Signal	G
	GRD	42	W-Y*	230B 1st	4A						S-2BK	B		
	BAT.	43	BR-R	202D	26						BL-1Y			
	BAT.	44	Y*	230B	26A						S-1BK			
Lamp and Motor Supply	GRD	45	W-BL*	1st 202D	6							R-Y†	10V AC	G
	GRD†	46	W-O*	230B	6A	R-G	232B	27	W-G*	207C	32R	R-W†		
	10V AC†	47	W-BR†	232B	9	G-R	232B	26				W†		±
	± or BAT.	48	BR†	232B	10		1st					W†		
	± or BAT.	49	W-S†	232B	19	BL*	202D	29				R†		
	± or BAT.	50	S†	232B	20	O*	230B	29A	G*	207C	29B	R†		

* 20 Gauge Wire.

† 18 Gauge Wire.

‡ Motor supply must be 10 volt ac. When direct current is used for lamps move W-O from terminal 46, clip 6 to terminal 45, clip 5 and W-BR from terminal 47, clip 6 to terminal 48, clip 5.

TABLE F

**311-TYPE KSU (9-13 LINES) CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS**

FEATURE	LEAD DESIGNATION	BLOCK D 66-TYPE CONNECTING BLOCK			TERMINAL ON 238A KTU
		ROW	COL	CABLE COLOR BLUE BINDER	
Line 1	T	1	F	W-BL	1A
	R	2		BL-W	2A
	A	3		W-O	3A
	A1	4		O-W	4A
Line 2	LG	5		W-G	6A
	L	6		G-W	5A
	T	7		W-BR	31A
	R	8		BR-W	32A
Line 3	A	9		W-S	33A
	A1	10		S-W	34A
	LG	11		R-BL	36A
	L	12		BL-R	35A
Line 4	T	13		R-O	1B
	R	14		O-R	2B
	A	15		R-G	3B
	A1	16		G-R	4B
Line 5	LG	17		R-BR	6B
	L	18		BR-R	5B
	T	19		R-S	31B
	R	20		S-R	32B
Line 6	A	21		BK-BL	33B
	A1	22		BL-BK	34B
	LG	23		BK-O	36B
	L	24		O-BK	35B
Line 7	T	25		BK-G	1C
	R	26		G-BK	2C
	A	27		BK-BR	3C
	A1	28		BR-BK	4C
Line 8	LG	29		BK-S	6C
	L	30		S-BK	5C
	T	31		Y-BL	31C
	R	32		BL-Y	32C
Line 9	A	33		Y-O	33C
	A1	34		O-Y	34C
	LG	35		Y-G	36C
	L	36		G-Y	35C
Line 10	T	37		Y-BR	1D
	R	38		BR-Y	2D
	A	39		Y-S	3D
	A1	40		S-Y	4D
Line 11	LG	41		V-BL	6D
	L	42		BL-V	5D
	T	43		V-O	31D
	R	44		O-V	32D
Line 12	A	45		V-G	33D
	A1	46		G-V	34D
	LG	47		V-BR	36D
	L	48		BR-V	35D
Spare		49		V-S	
		50		S-V	

TABLE F (Cont)

311-TYPE KSU (9-13 LINES) CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS

FEATURE	LEAD DESIGNATION	BLOCK B 66-TYPE CONNECTING BLOCK			TERMINAL ON 238A KTU	TERMINAL ON 230B KTU	TERMINAL ON 207C KTU	TERMINAL ON 216A KTU
		ROW	COL	CABLE COLOR ORANGE BINDER				
Line 9	T	1	F	W-BL	1E			
	R	2		BL-W	2E			
	A	3		W-O	3E			
	A1	4		O-W	4E			
	LG	5		W-G	6E			
Line 10	L	6		G-W	5E			
	T	7		W-BR		1A		
	R	8		BR-W		2A		
	A	9		W-S		3A		
	A1	10		S-W		4A		
Line 11	LG	11		R-BL		6A		
	L	12		BL-R		5A		
	T	13		R-O		1B		
	R	14		O-R		2B		
	A	15		R-G		3B		
Line 12	A1	16		G-R		4B		
	LG	17		R-BR		6B		
	L	18		BR-R		5B		
	T	19		R-S		1C		
	R	20		S-R		2C		
Line 13	A	21		BK-BL		3C		
	A1	22		BL-BK		4C		
	LG	23		BK-O		6C		
	L	24		O-BK		5C		
	T	25		BK-G		1D		
Dial Intercom	R	26		G-BK		2D		
	A	27		BK-BR		3D		
	A1	28		BR-BK		4D		
	LG	29		BK-S		6D		
	L	30		S-BK		5D		
Aud Sig Assoc with Dial Intercom	T	31		Y-BL			1B	
	R	32		BL-Y			2B	
	LG	33		Y-O			32B	
	L	34		O-Y			3B	
	Code	35		Y-G			36B	
	8	36		G-Y				13
	4	37		Y-BR			36B	
	R	38		BR-Y				14
	5	39		Y-S			37B	
	R	40		S-Y				15
	6	41		V-BL			37B	
	R	42		BL-V				16
	7	43		V-O			38B	
	R	44		O-V				17
	8	45		V-G			38B	
	R	46		G-V				18
9	B	47		V-BR			40B	
	R	48		BR-V				19
	B	49		V-S			40B	
0	R	50		S-V				20

TABLE F (Cont)

**311-TYPE KSU (9-13 LINES) CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS**

FEATURE	LEAD DESIGNATION	BLOCK C 66-TYPE CONNECTING BLOCK			TERMINAL ON 238A KTU	TERMINAL ON 230B KTU	TERMINAL ON 207C KTU	TERMINAL ON 216A KTU
		ROW	COL	CABLE COLOR GREEN BINDER				
Aud Sig Assoc with Dial Intercom	Code 21	B R	1 2	F	W-BL BL-W		31B	21
	22	B R	3 4		W-O O-W		4B	22
	23	B R	5 6		W-G G-W		4B	23
	24	B R	7 8		W-BR BR-W		14B	24
	25	B R	9 10		W-S S-W		14B	25
	26	B R	11 12		R-BL BL-R		24B	26
	27	B R	13 14		R-O O-R		24B	27
	28	B R	15 16		R-G G-R		30B	28
	29	B R	17 18		R-BR BR-R		30B	29
	20	B R	19 20		R-S S-R		24B	30
Aud Sig Assoc with Line Ckts	Line 1	B1 or BZ1 R1 or BZ	21 22		BK-BL BL-BK	18A 19A		
	Line 2	B1 or BZ1 R1 or BZ	23 24		BK-O O-BK	38A 39A		
	Line 3	B1 or BZ1 R1 or BZ	25 26		BK-G G-BK	18B 19B		
	Line 4	B1 or BZ1 R1 or BZ	27 28		BK-BR BR-BK	38B 39B		
	Line 5	B1 or BZ1 R1 or BZ	29 30		BK-S S-BK	18C 19C		
	Line 6	B1 or BZ1 R1 or BZ	31 32		Y-BL BL-Y	38C 39C		
	Line 7	B1 or BZ1 R1 or BZ	33 34		Y-O O-Y	18D 19D		
	Line 8	B1 or BZ1 R1 or BZ	35 36		Y-G G-Y	38D 39D		
	Line 9	B1 or BZ1 R1 or BZ	37 38		Y-BR BR-Y	18E 19E		
	Line 10	B1 or BZ1 R1 or BZ	39 40		Y-S S-Y		25A 10A	
	Line 11	B1 or BZ1 R1 or BZ	41 42		V-BL BL-V		27A 10B	
	Line 12	B1 or BZ1 R1 or BZ	43 44		V-O O-V		27A 10C	
	Line 13	B1 or BZ1 R1 or BZ	45 46		V-G G-V		30A 10D	
Spare			47		V-BR BR-V			
			48		V-S S-V			
			49 50					

TABLE F (Cont)

**311-TYPE KSU (9-13 LINES) CONNECTIONS BETWEEN
APPARATUS AND 66-TYPE CONNECTING BLOCKS**

FEATURE	LEAD DESIGNATION	BLOCK D 66-TYPE CONNECTING BLOCK			TERMINAL ON 238A KTU	TERMINAL ON 230B KTU
		ROW	COL	CABLE COLOR BROWN BINDER		
CO or PBX Lines	Line 1	T R	1 2	F	W-BL BL-W	7A 8A
	Line 2	T R	3 4		W-O O-W	27A 28A
	Line 3	T R	5 6		W-G G-W	7B 8B
	Line 4	T R	7 8		W-BR BR-W	27B 28B
	Line 5	T R	9 10		W-S S-W	7C 8C
	Line 6	T R	11 12		R-BL BL-R	27C 28C
	Line 7	T R	13 14		R-O O-R	7D 8D
	Line 8	T R	15 16		R-G G-R	27D 28D
	Line 9	T R	17 18		R-BR BR-R	7E 8E
	Line 10	T R	19 20		R-S S-R	7A 8A
	Line 11	T R	21 22		BK-BL BL-BK	7B 8B
	Line 12	T R	23 24		BK-O O-BK	7C 8C
	Line 13	T R	25 26		BK-G G-BK	7D 8D
Spare			27 28		BK-BR BR-BK	
			29 30		BK-S S-BK	
			31 32		Y-BL BL-Y	
			33 34		Y-O O-Y	
			35 36		Y-G G-Y	
See Table G for Power Connections			37 38		See Table G for Power Connections	
			39 40			
			41 42			
			43 44			
			45 46			
			47 48			
			49 50			

TABLE G

**311-TYPE KSU (9-13 LINES) CONNECTIONS BETWEEN APPARATUS,
66-TYPE CONNECTING BLOCK, AND POWER PLANT**

FEATURE	LEAD DESIG	CONNECTING BLOCK D												
		ROW ON 66-TYPE CONN BLOCK	COL F			COL E			COL D			COL A		
			CABLE COLOR	TO		CABLE COLOR	TO		CABLE COLOR	TO		CABLE COLOR	TO	
				KTU	TERMINAL		KTU	TERMINAL		KTU	TERMINAL		KTU	TERMINAL
Audible Signal Power Supply	GRD ±, BAT., or 105V ±	37	V-BR		29F									
		38	BR-V	238A	30F									
20v dc Talk or A Bat.	GRD BAT.	39	V-S	207C	10B							G-2Y	20V DC Talk	G
		40	S-V	238A	10G							G-1Y		B
20v dc Signal or B Bat.	GRD	41	W-BL*	238A	9A	W-O*	238A	9C				O-S*	20V DC Signal	G
	GRD	42	W-G*	238A	9E	W-Y*	230B	4A				R-G*		
	BAT.	43	BL*	238A	10A	O*	238A	10C				O-BL*		B
	BAT.	44	G*	238A	10E	Y*	230B	25A				R-BR*		
Lamp and Motor Supply	GRD	45	BK-G*	238A	29A	Y-G*	238A	29E				R-Y†	10V AC	G
	GRD†	46	BR-G*	238A	29C	Y-O*	230B	6A	V-G	238A	39F	R-W†		
	10V AC†	47	W-BR†	238A	9G	BK-W*	238A	30A	G-V	238A	40F	W†		±
	± or BAT.	48	BR†	238A	19G	BR-Y*	238A	30C				R†		
	± or BAT.	49	W-S†	238A	29G	Y-BL*	238A	30E						
	± or BAT.	50	S†	238A	39G	Y-S*	230B	29A						

* 20-Gauge Wire.

† 18-Gauge Wire.

‡ Motor supply must be 10 volt ac. When direct current is used for lamps move the following lead:

LEAD COLOR	FROM	TO
BR-G	Term. 46, Clip 6	Term. 45, Clip 4
Y-O	Term. 46, Clip 5	Term. 45, Clip 3
W-BK	Term. 47, Clip 6	Term. 48, Clip 4
BK-W	Term. 47, Clip 5	Term. 49, Clip 4

TABLE H

310- OR 311-TYPE KSU (9 TO 13 LINES)
LINE CIRCUIT PORTION OF 238A KTU

REF DESIG	TERMINAL ON 238A KTU									LEAD DESIG		
	CKT 1	CKT 2	CKT 3	CKT 4	CKT 5	CKT 6	CKT 7	CKT 8	CKT 9			
A	7A	27A	7B	27B	7C	27C	7D	27D	7E	T	CO or PBX Line	
B	8A	28A	8B	28B	8C	28C	8D	28D	8E	R		
C	17A	37A	17B	37B	17C	37C	17D	37D	17E	Line Ringing		
D	21E	22E	23E	24E	25E	31E	32E	33E	34E	H		
E	1A 11A ○—○	21A 31A ○—○	1B 11B ○—○	21B 31B ○—○	1C 11C ○—○	21C 31C ○—○	1D 11D ○—○	21D 31D ○—○	1E 11E ○—○	T	Station	
F	2A 12A ○—○	22A 32A ○—○	2B 12B ○—○	22B 32B ○—○	2C 12C ○—○	22C 32C ○—○	2D 12D ○—○	22D 32D ○—○	2E 12E ○—○	R		
G	5A 15A ○—○	25A 35A ○—○	5B 15B ○—○	25B 35B ○—○	5C 15C ○—○	25C 35C ○—○	5D 15D ○—○	25D 35D ○—○	5E 15E ○—○	L		
H	3A 13A ○—○	23A 33A ○—○	3B 13B ○—○	23B 33B ○—○	3C 13C ○—○	23C 33C ○—○	3D 13D ○—○	23D 33D ○—○	3E 13E ○—○	A		
J	20A ○—○	40A ○—○	20B ○—○	40B ○—○	20C ○—○	40C ○—○	20D ○—○	40D ○—○	20E ○—○	Audible Signal		
K	18A ○—○	38A ○—○	18B ○—○	38B ○—○	18C ○—○	38C ○—○	18D ○—○	38D ○—○	18E ○—○			
L	19A ○—○	39A ○—○	19B ○—○	39B ○—○	19C ○—○	39C ○—○	19D ○—○	39D ○—○	19E ○—○			
M	6F		7F		8F		9F		10F	Lamp Wink		
N	36E		37E		38E		39E		40E	Lamp Flash		
P	9A ○—○		9B ○—○		9C ○—○		9D ○—○		9E	Grd	Relay Power Supply	
Y	10A ○—○		10B ○—○		10C ○—○		10D ○—○		10E	Bat.		
Q	4A 14A ○—○	24A 34A ○—○	4B 14B ○—○	24B 34B ○—○	4C 14C ○—○	24C 34C ○—○	4D 14D ○—○	24D 34D ○—○	4E 14E ○—○	A1	Station	
R	6A 16A ○—○	26A 36A ○—○	6B 16B ○—○	26B 36B ○—○	6C 16C ○—○	26C 36C ○—○	6D 16D ○—○	26D 36D ○—○	6E 16E ○—○	LG		
S	29A ○—○		29B ○—○		29C ○—○		29D ○—○		29E	Grd	Lamp Power Supply	
T	30A, 16F ○—○		30B, 17F ○—○		30C, 18F ○—○		30D, 19F ○—○		30E, 20F ○—○	± or LB		
U			1G ○—○		11G ○—○				21G ○—○	HA	Time-out	
V			2G ○—○		12G ○—○				22G ○—○	TO		
W			3G ○—○		13G ○—○				23G ○—○	CO		
X			4G ○—○		14G ○—○				24G ○—○	LK		

○—○ Indicates Factory Strapping.

TABLE I

**310- OR 311-TYPE KSU (9 TO 13 LINES)
230B KTU**

REF DESIG	TERMINAL ON 230B KTU				LEAD DESIG	
	CKT 1 (10)*	CKT 2 (11)*	CKT 3 (12)*	CKT 4 (13)*		
A	7A	7B	7C	7D	T	CO or PBX Line
B	8A	8B	8C	8D	R	
C	17A	17B	17C	17D	Line Ringing	
D	18A	18B	18C	18D	H	
E	1A 11A ○ — ○	1B 11B ○ — ○	1C 11C ○ — ○	1D 11D ○ — ○	T	Station
F	2A 12A ○ — ○	2B 12B ○ — ○	2C 12C ○ — ○	2D 12D ○ — ○	R	
G	5A 15A ○ — ○	5B 15B ○ — ○	5C 15C ○ — ○	5D 15D ○ — ○	L	
H	3A 13A ○ — ○	3B 13B ○ — ○	3C 13C ○ — ○	3D 13D ○ — ○	A	
J	9A ○	9B ○	9C ○	9D ○	Audible Signal	
L	10A	10B	10C	10D		
M	20A ○ — ○	20B ○	20C ○ — ○	20D ○	Lamp Wink	
N	19A ○ — ○	19B ○	19C ○ — ○	19D ○	Lamp Flash	
Q	4A	4B	4C	4D	A1	Station
R	6A	6B	6C	6D	LG	
T	29A ○		28A ○		± or Bat.	Lamp Pwr Supply

* Number in parenthesis denotes circuit in package.

○ ○ Indicates Factory Strapping.

TABLE J
2301-TYPE KSU CONNECTIONS BETWEEN APPARATUS
AND 66-TYPE CONNECTING BLOCKS

FEATURE	LEAD DESIG	BLOCK A 66B1-25 CONNECTING BLOCK			TERMINAL ON 232A OR B KTU*	TERMINAL ON KTU		TERMINAL ON 202C OR D KTU	TERMINAL ON 207C KTU
		ROW	COL	CABLE COLOR BLUE BINDER		230A	230B†		
Line 1	T	1	F	W-BL		1A			
	R	2		BL-W		2A			
	A	3		W-O		3A			
	A1	4		O-W		4A			
Line 2	LG	5		W-G		6A			
	L	6		G-W		5A			
	T	7		W-BR		1B			
	R	8		BR-W		2B			
Line 3	A	9		W-S		3B			
	A1	10		S-W		4B			
	LG	11		R-BL		6B			
	L	12		BL-R		5B			
Line 4	T	13		R-O		1C			
	R	14		O-R		2C			
	A	15		R-G		3C			
	A1	16		G-R		4C			
Line 5	LG	17		R-BR		6C			
	L	18		BR-R		5C			
	T	19		R-S		1D			
	R	20		S-R		2D			
Line 6	A	21		BK-BL		3D			
	A1	22		BL-BK		4D			
	LG	23		BK-O		6D			
	L	24		O-BK		5D			
Line 7	T	25		BK-G				1	
	R	26		G-BK				2	
	A	27		BK-BR				3	1st
	A1	28		BR-BK				4	
Line 8	LG	29		BK-S				6	
	L	30		S-BK				5	
Line 9	T	31		Y-BL				1	
	R	32		BL-Y				2	
	A	33		Y-O				3	2nd
	A1	34		O-Y				4	
Line 10	LG	35		Y-G				6	
	L	36		G-Y				5	
Motor Supply	GRD	37		Y-BR	27				
	10v ±	38		BR-Y	26				
Spare		39		Y-S					
		40		S-Y					
Lamp Supply	± or BAT.	41†		V-BL	9				
	± or BAT.	42†		BL-V	10				
	GRD	43		V-O		30A	6A		
	± or BAT.	44†		O-V		29A	29A		
Audible Signal Supply	GRD	45		V-G		25A	30A		
	BAT., ±, or 105V ±	46		G-V	29				
20v dc Talk or A Bat.	GRD	47		V-BR	25				
	BAT.	48		BR-V	24				
20v dc Sig or B Bat.	GRD	49		V-S		26A	26A		
	BAT.	50		S-V		27A	4A		

* 232B KTU is arranged internally to disable time-out feature when BF relay is operated.

† 230B KTU is arranged for individual fusing of circuits 1-2 and 3-4 lamp input power.

‡ With 1 to 72 lamps, strap terminals 41, 42, and 44; with 73 to 144 lamps, strap terminals 42 and 44 and run separate power lead to 41.

(TABLE J (Cont))
 2301-TYPE KSU CONNECTIONS BETWEEN APPARATUS
 AND 66-TYPE CONNECTING BLOCKS

FEATURE	LEAD DESIG	BLOCK A 66B1-25 CONNECTING BLOCK			TERMINAL ON 232A OR B KTU*	TERMINAL ON KTU		TERMINAL ON 202C OR D KTU	TERMINAL ON 207C KTU
		ROW	COL	CABLE COLOR ORANGE BINDER		230A	230B†		
Manual Intercom Line	T	1	↑ F ↓	W-BL	30				
	R	2		BL-W	40				
	LG	3		W-O	*				
	L	4		O-W	28				
Audible Signal	Line 1	B1 or BZ1		W-G		25A 10A	30A 10A		
		R1 or BZ		G-W					
	Line 2	B1 or BZ1		W-BR		25A 10B			
		R1 or BZ		BR-W					
	Line 3	B1 or BZ1		W-S		28A 10C	30A 10C		
		R1 or BZ		S-W					
	Line 4	B1 or BZ1		R-BL		28A 10D	25A 10D		
		R1 or BZ		BL-R					
	Line 5	B1 or BZ1		R-O				25 10	1st
		R1 or BZ		O-R					
	Line 6	B1 or BZ1		R-G				25 10	2nd
		R1 or BZ		G-R					
Dial Selective Intercom Line	T	17		R-BR					1B
	R	18		BR-R					2B
	LG	19		R-S					32B
	L	20		S-R					3B
	B(2)	21		BK-BL					36B
	R(2)	22		BL-BK					12A
	B(3)	23		BK-O					36B
	R(3)	24		O-BK					13A
	B(4)	25		BK-G					37B
	R(4)	26		G-BK					14A
	B(5)	27		BK-BR					37B
	R(5)	28		BR-BK					15A
	B(6)	29		BK-S					38B
	R(6)	30		S-BK					16A
	B(7)	31		Y-BL					38B
	R(7)	32		BL-Y					17A
	B(8)	33		Y-O					40B
	R(8)	34		O-Y					18A
	B(9)	35		Y-G					40B
	R(9)	36		G-Y					19A
CO or PBX	Line 1	B(0)		Y-BR					81B
		R(0)		BR-Y					20A
	Line 2			Y-S		7A 8A			
				S-Y					
	Line 3			V-BL		7B 8B			
				BL-V					
	Line 4			V-O		7C 8C			
				O-V					
	Line 5			V-G		7D 8D			
				G-V					
	Line 6			V-BR				7 8	1st
				BR-V					
				V-S				7 8	2nd
				S-V					

* Connect to convenient lamp ground.

TABLE K
2311-TYPE KSU — CONNECTIONS

FEATURE	LEAD DESIG	BLOCK A 66B1-25 CONNECTING BLOCK			TERMINAL ON 232A OR B KTU*	TERMINAL ON 230A OR B KTU†	TERMINAL ON 202C OR D KTU		TERMINAL ON 207C KTU
		ROW	COL	CABLE COLOR BLUE BINDER					
Line 1	T	1	F	W-BL		1A			
	R	2		BL-W		2A			
	A	3		W-O		3A			
	A1	4		O-W		4A			
	LG	5		W-G		6A			
Line 2	L	6		G-W		5A			
	T	7		W-BR		1B			
	R	8		BR-W		2B			
	A	9		W-S		3B			
	A1	10		S-W		4B			
Line 3	LG	11		R-BL		6B			
	L	12		BL-R		5B			
	T	13		R-O		1C			
	R	14		O-R		2C			
	A	15		R-G		3C			
Line 4	A1	16		G-R		4C			
	LG	17		R-BR		6C			
	L	18		BR-R		5C			
	T	19		R-S		1D			
	R	20		S-R		2D			
Line 5	A	21		BK-BL		3D			
	A1	22		BL-BK		4D			
	LG	23		BK-O		6D			
	L	24		O-BK		5D			
	T	25		BK-G			1	1st	
Line 6	R	26		G-BK			2		
	A	27		BK-BR			3		
	A1	28		BR-BK			4		
	LG	29		BK-S			6		
	L	30		S-BK			5		
Line 7	T	31		Y-BL			1	2nd	
	R	32		BL-Y			2		
	A	33		Y-O			3		
	A1	34		O-Y			4		
	LG	35		Y-G			6		
Line 8	L	36		G-Y			5		
	T	37		Y-BR			1	3rd	
	R	38		BR-Y			2		
	A	39		Y-S			3		
	A1	40		S-Y			4		
Manual Intercom Line	LG	41		V-BL			6		
	L	42		BL-V			5		
	T	43		V-O	30				
	R	44		O-V	40				
	LG	45		V-G	27				
Dial Selective Intercom Line	L	46		G-V	28				
	T	47		V-BR					1B
	R	48		BR-V					2B
	LG	49		V-S					32B
	L	50		S-V					3B

* 232B KTU is arranged internally to disable time-out feature when BF relay is operated.

† 230B KTU is arranged for individual fusing of circuits 1-2 and 3-4 lamp input power.

TABLE K (Cont)

2311-TYPE KSU — CONNECTIONS

FEATURE	LEAD DESIG	BLOCK B 6681-25 CONNECTING BLOCK			TERMINAL ON 232A OR B KTU	TERMINAL ON KTU		TERMINAL ON 202C OR D KTU	TERMINAL ON 207 KTU
		ROW	COL	CABLE COLOR ORANGE BINDER		230A	230B		
Audible Signal Associated With Dial Selective Intercom Line	B(2)	1	F	W-BL					36B
	R(2)	2		BL-W					12A
	B(3)	3		W-O					36B
	R(3)	4		O-W					13A
	B(4)	5		W-G					37B
	R(4)	6		G-W					14A
	B(5)	7		W-BR					37B
	R(5)	8		BR-W					15A
	B(6)	9		W-S					38B
	R(6)	10		S-W					16A
	B(7)	11		R-BL					38B
	R(7)	12		BL-R					17A
	B(8)	13		R-O					40B
	R(8)	14		O-R					18A
	B(9)	15		R-G					40B
	R(9)	16		G-R					19A
	B(0)	17		R-BR					31B
	R(0)	18		BR-R					20A
Aud Sig Assoc with Line Ckts	Line 1	B1 or BZ1	19	R-S		25A 10A	30A 10A		
	Line 2	B1 or BZ1	20	S-R					
	Line 3	B1 or BZ1	21	BK-BL		25A 10B			
	Line 4	R1 or BZ	22	BL-BK					
	Line 5	B1 or BZ1	23	BK-O		25A 10C			
	Line 6	R1 or BZ	24	O-BK					
	Line 7	B1 or BZ1	25	BK-G		28A 10D	30A 10D		
CO or PBX	Line 1	T	26	G-BK					
	Line 2	R	27	BK-BR				25 10	1st
	Line 3	T	28	BR-BK					
	Line 4	R	29	BK-S				25 10	2nd
	Line 5	T	30	S-BK					
	Line 6	R	31	Y-BL				25 10	3rd
	Line 7	T	32	BL-Y					
	Line 1	R	33	Y-O		7A			
	Line 2	T	34	O-Y		8A			
	Line 3	R	35	Y-G		7B			
	Line 4	T	36	G-Y		8B			
	Line 5	R	37	Y-BR		7C			
	Line 6	T	38	BR-Y		8C			
	Line 7	R	39	Y-S		7D			
	Line 1	T	40	S-Y		8D			
Ringing Supply*	Line 2	T	41	V-BL				7 8	1st
	Line 3	R	42	BL-V					
	Line 4	T	43	V-O				7 8	2nd
	Line 5	R	44	O-V					
	Line 6	T	45	V-G				7 8	3rd
	Line 7	R	46	G-V					
	Line 1	T	47	V-BR					
Local Ground	Supply*	GRD	48	BR-V	29	28A	30A		
	Ground	GRD	49	V-S†					
			50	S-V†					

* Do not mount ringing supply (frequency-generator) in cabinet with equipment, due to noise difficulties.

† Connect to ground terminal on J86731D, List 1 power plant.