THE 601A KEY TELEPHONE SYSTEM, 5 LINE AND 10 STATION INTERCOM CAPACITY

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ASSOCIATED PUBLICATIONS:

DOCUMENT NO.

EQUIPMENT COVERED

184163-101	184162-101	Ringing Generator Kit (601A)
184243-101	183977-101	Dial Intercom Card (601A)
184244-101	184965-101	Interrupter Card (601A)
184245-101	183969-101	Power Supply (601A)
184246-101	183973-101	Call Announcing Card (601A)
184247-101	183981-101	T-T Adapter for Intercom (601A)

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Fig. 1-601A Key Service Unit With Ringing Generator Installed

1.00 GENERAL

1.01 This publication covers Identification, Installation, and Operation. of a 601A Key Telephone System and associated apparatus.

1.02 Whenever this publication is re-issued, the reasons for re-issue will be listed in this paragraph.

1.03 The 601A key system provides standard key system functions and features for 5 CO lines and 10 stations.

1.04 Optional features such as dial intercom (with or without tone-and-voice signaling with handsfree answerback); manual intercom; music-on-hold; and dial access to a public address system for paging from intercom stations may be added.

1.05 Standard key telephones are used in a 601A system.

LINE FEATURES

- 1.06 Line features include:
 - Five-line capacity
 - Music-on-hold (optional)
 - Use of standard 400-type line cards to provide line pick-up, hold, and visual and audible signaling.
 - Buzzer or ringer signaling. (Ringer signaling requires an easily installed ring generator.)
 - Common audible signaling (strapping option).

INTERCOM FEATURES

- 1.07 Standard Dial Intercom features include:
 - Ten station capacity
 - Two digit dial codes
 - Common talk path
 - Busy-lamp indication
 - Last Party clear
- 1.08 Optional Intercom features are:
 - Tel-Touch dialing
 - Dial tone, ringback (call announcer card)
 - Call Announcing, providing dial tone and ringback tone.
 - A system can be split with five station codes designated for call announcing and five for buzzers or ringers.
 - Manual intercom.
 - Dial access to a paging system.
 - Pushbutton access to a paging system.

TECHNICAL SUMMARY

Power input: 115 Vac, 50/60 Hz, 1.5A fused.

Power supply outputs: -24 Vdc at 1A, 18 Vac at 1A, and 10 Vac at 2A.

Line capacity: 5

Station capacity: 10 (dial codes)

Busy lamp capacity (10 Vac): 50

Approximate Dimensions, inches (cm) Height 15.2 (38.6) Width 8.1 (20.6) Depth 6.9 (17.5) Weight (standard KSU) approximately 12 lb.

2.00 IDENTIFICATION

STANDARD 601A00-0P0 KEY SERVICE UNIT

2.01 The basic 601A Key Service Unit (KSU) is designed for wall or panel mounting and includes a Backboard and Card Frame Assembly, a Power Supply, an Interrupter, connecting block, and a cover.

2.02 The Backboard and Card Frame Assembly has seven 18-contact card connectors, one 20-contact card connector, and one 44-contact card connector. Two of the 18-contact connectors are dedicated to the Power Supply and Interrupter. The remaining five are wired for CO/PBX Line cards. Pins 1 through 18 of the 20-contact card connector are wired to individual terminals on the connecting block so it can be easily wired for various optional cards. (NOTE: This connector will not accept 20-pin cards such as the 405A Semiautomatic Exclusion, K414A Ringdown Tie Line, or the K416A Station Line circuits.) The 44-contact card connector is dedicated to intercom.

Power Supply (183969-101)

2.02 The power supply provides all voltages required for a system using buzzer signaling or call announcing. Power input is 115 Vac, 50/60 Hz and outputs are as follows:

(1) Regulated -24 Vdc at 1 amp for intercom and line card talk battery and power for logic circuits and relays.

(2) 18 Vac at 1 amp unregulated for power to buzzers for intercom or CO signaling.

(3) 10 Vac at 2 amps for station lamps. This will supply 50 lamps, continuous load.

2.04 The unit consists of a transformer and other electrical components mounted on a printed circuit board. It includes a fuse, power cord and a jack for connection to a ring generator kit P/N184162-101.

2.05 The power supply board plugs into the power supply connector provided in the 601A key system. Two plastic push fasteners are provided to anchor the power supply to the KSU frame. The power cord plugs into connector J1 on the PC board. (3-pin connector.)

Interrupter Card (183969-101)

2.06 The interrupter (P/N 183965-101) is intended for use with the 601A key system to provide lamp flash, lamp wink, and interrupted (intermittent) ringing. The ringing may be 105 Vac or 18 Vac depending on the strapping of option block TC1 located near the center of the card at the connector end.

2.07 The unit is installed by plugging it into the second (from the top) card connector of the 601A KSU.

RINGING GENERATOR KIT (184162-101)

2.08 A ringing generator kit must be separately ordered and installed if ringers are used in the system. The 184162-101 Ringing Generator Kit was designed for the 601A key system for this purpose. It has a nominal output of 105 Vac, 30 Hz.

CO/PBX LINE CARD KTU (K400E)

2.09 One K400E CO/PBX line card KTU must be separately ordered and installed for each CO or PBX line coming to the system. These are installed by inserting them into prewired line card connectors. The K400E KTU includes circuitry to facilitate music-on-hold and signaling through a separate lead.

DIAL INTERCOM

General

2.10 The dial intercom system may be of any one of several configurations:

(1) Using buzzers for signaling, with or without dial tone and ringback. (Dial tone and ringback are provided by the call announcing card.)

(2) Using ringers for signaling, with or without dial tone and ringback. (A ringing generator must be installed for ringer signaling, and a call announcing card must be installed to provide dial tone and ringback.)

(3) Using call announcers for signaling. In this application, the call announcing card is strapped to provide a tone burst and return tone instead of ringback. It also provides dial tone

(4) Mixed signaling, using buzzers (or ringers) and call announcers for signaling. Five station codes must be assigned to each method; oddnumbered stations will be signaled by Call Announcer and even-numbered stations by buzzer (or ringer).

(5) The dial intercom is normally rotary but can be adapted to accept Tel-Touch (tone) dialing by adding a piggy-back card to the intercom card.

Dial Intercom Card (183977-101)

2.11 The intercom card (P/N 183977-101) is intended for use with the ITT 601A key system. It will provide intercom for up to ten rotary-dial stations with buzzer signaling or, optionally, ringing signaling if a ringing generator kit (P/N 184162-101) is installed in the KSU. It can be converted to handle Tel-Touch (tone) dialing by the addition of a piggy-back card (P/N 183981-101). The intercom card does not provide dial tone or ringback, but these features can be added by installing a call-announcing card in the KSU even though call announcers are not used in the system.

2.12 The intercom card plugs into a dedicated connector in the 601A KSU. Station connections are made on the terminal block provided in the KSU.

Tel-Touch (Tone Dial) Adapter Card (183981-101)

2.13 The 183981-101 Tel-Touch adapter card was designed for use in conjunction with the 183977-101 dial-intercom card to permit Tel-Touch dialing on intercom calls.

2.14 The Tel-Touch adapter card will decode standard dual-tone multiple-frequency (DTMF) codes so Tel-Touch dialing may be used on the 601A key system intercom.

2.15 The Tel-Touch card is designed to be piggy-back mounted on the 183977-101 dial-intercom card and the assembly is then inserted in the intercom card slot of the 601A KSU.

OPTIONAL AUXILIARY FEATURES

Call Announcing

2.16 The 183973-101 Call Announcing card was designed for use in the option slot of the 601A key system to permit tone-and-voice signaling with handsfree answerback for up to ten stations on intercom calls.

2.17 The stations to be signaled by tone-andvoice signaling will require a call announcer for each station to be signaled in this manner. This may be a 174B Call Announcer connected to each phone or an 870 (rotary) or 2870 (T-T) telephone with integral call announcer. If stations are situated within 15 feet of each other, one Call Announcer may be used to serve several stations.

2.18 The 183973-101 Call Announcing Card may also be used in a 601A key system to provide dial tone and ringback for intercom whether Call Announcers are used or not.

Dial Tone and Ringback on Intercom Calls

2.19 Dial tone and ringback for intercom calls is provided by installing the call announcing card even though call announcers are not used.

Manual Intercom (K401B KTU)

2.20 The K401B manual intercom KTU provides busy-lamp feed and talk path for manual intercom or for a private line between two stations only. Stations must be signaled by a separate buzzer arrangement or by using the dial intercom. This KTU requires A-battery (AB) and A-ground(AG) to be strapped to pins 18 and 3 respectively. This strapping is done on the 601A connecting block.

2.21 The K401B KTU may be installed in any vacant line card slot or in the "option" slot.

2.22 Manual intercom may require two buttons of the connected telephones, one button to access the line and one for signaling. An external button can be used for signaling.

Voice Paging through PA System

2.23 Voice Paging through a customer owned PA system from any station can be provided by either of two means: (1) button access to a PA amplifier, or (2) dial access to PA amplifier.

2.24 Button-Accessed Paging. A K401B Manual Intercom card may be used to access the PA amplifier. A person at any station can page by holding down a line-pickup button that has been converted to non-locking operation and talking into his handset. In planning this type of installation, remember that a button will be used at each phone and a line card position in the KSU.

2.25 Dial-Accessed Paging. In a system using all ringers and buzzers for intercom signaling (with or without dial tone and ringback) a K410A PagingAdapter KTU is installed in a vacant line card slot to provide this feature. In system using all call announcers for intercom signaling, the K410A KTU is not required. An intercom number is assigned to paging, and interface circuit consisting of a .1 Mfd, 25 V, capacitor and a 600-Ohm resistor must be connected to the PA amplifier input. In a mixed system (using buzzers or ringers at some stations and call announcers at other stations) either of the two methods may be used. If a buzzer/ringer number is to be used (even number) a K410A KTU must be used, and this will reduce line capacity by one.

Music-On-Hold (K403A KTU)

2.26 A K403A KTU may be separately ordered and installed in the option slot or in a separately provided card panel, such as a K359A one-card panel, to provide music-on-hold for a maximum of six CO or PBX lines, a low-level music source, such as a tape deck or FM tuner, must be separately provided.

SUBSETS AND CALL ANNOUNCERS

Six-Button Subsets

2.27 Six-button subsets will access a total of five lines including intercom. Refer to an ITT "Telephone Guide", price list, or "Key System Guide" KSG 6-79 for ordering information. If

call announcing is used for signaling, a 174B Call Announcer must be separately provided and connected to each station to be signaled by call announcing.

Ten-Button Subsets

2.28 Ten-button subsets will access a total of nine lines including intercom. Thus a 10-button set may handle five CO/PBX lines, rotary intercom and manual intercom and will have a remaining line button that may be used to access a public address system for voice paging.

2.29 Ten-button sets are offered with integral call announcer. Ordering information follows:

- (1)0870**-0BA-42M Set; 10-button; desk; R-D; ringer; call announcer
- (2) 0870**-0BA-46M; same with operator recall button
- (3) 0870**-0BA-76M; same as (1) plus automatic exclusion circuit
- (4) 2870**-0BA-42M; same as (1) except T-T dial instead of R-D
- (5) 2870**-0BA-46M; same as (2) except T-T dial instead of R-D
- (6) 2870**-0BA-76M; same as (3) except T-T dial instead of R-D

If subsets are wanted without ringer, change "BA" to "LR" in ordering number.

174**-00B Call Announcer Unit

2.30 Serves as loudspeaker for tone-and-voice signaling and as a microphone for handsfree answerback. One call announcer can serve one telephone or several telephones if they are located in the same area. It is equipped with a privacy switch that can be used manually to disable the transmit mode. The purpose of this switch is to prevent a caller from hearing a conversation at the called station.

**Substitute color code as follows: 00, Black; 05, Moss Green; 13, Beige; 15, White; 44, Light Ash; 45, Cocoa Brown

3.00 PLANNING THE INSTALLATION

GENERAL

3.01 The KSU should be centrally located to minimize length of cable runs.

3.02 The KSU must be within five feet (length of power cord) of a 110 Vac service outlet which is not controlled by a switch accessible for false operation. *Do not splice or add extensions to power cord*.

3.03 The service outlet must be of the grounding type and should provide an individual circuit.

3.04 The connecting block in the KSU will provide terminating points for five station cables.

If more than five stations are to be connected, additional 66-type connecting blocks must be mounted near the KSU. (See figures 2 and 3.)

NOTE: The connecting block arrangement is an installer option. Trouble-shooting is simplified if a separate split 66-type block is used for each two stations to be connected. These blocks are then connected in multiple to the KSU block with the exception of the RT leads which must be wired individually from the KSU "SIG" clips to each station side of each block, and call-announcer stations must have an individual A-lead from the intercom button to any clip in column 6, rows 1 through 10.

PLANNING CHART

3.05 Fill in the "Station Planning" Chart.

CHART	CHART I. 601A KEY SYSTEM PLANNING, STATIONS AND LINES											
ICM NO.	"SIG" TERM	PARTY OR	WHICH BUTTON WILL THESE LINES APPEAR ON			SIGNALING MODE (NOTE 1)			SUBSET/CALL ANNOUNCER			
												(NOTE 2)
10	0											
11	1											
12	2											
13	3											
14	4											
15	5											
16	6											
17	7											
18	8							_				
19	9											
Additio	nal KSL) .										
Equipment Required												
K400E Line Card KTU			1	1	1	1	1					
183977-101 Intercom Card							1					
183973-101 Call Announcing Card								1				
184162-101 Ringing Generator Kit				it						1		

NOTE 1: CA = Call Announcing

- RN = Ringer
- BZ = Buzzer

A system may be mixed 5 + 5 call announcing and buzzers (or ringers). Odd number stations must be call-announcer stations and even numbered stations must be buzzer or ringer stations.

NOTE 2: Stations to be signaled by call announcing must have a 174B call announcer connected to the telephone set or a telephone set with integral call announcer (model 870 rotary dial or 2870 T-T dial.)

KSP601-00A

FEATURE OR FUNCTION	ORDERING NO.	DESCRIPTION
CO/PBX Line	000400-00E	KTU, CO/PBX Line Card. 18-contact P.C. board. One required per CO/PBX line.
Music-On-Hold	000403-00A	KTU, Music-on-hold. One required per system. (Requires low- level music source.) 18-contact P.C. board.
Ringer Signaling	184162-101	KIT, Ringing Generator. One required per system to provide ringing voltage.
Dial Intercom	183977-101	KTU, Dial Intercom. One required per system. 44-contact P.C. board
Tel-Touch (Tone) Dialing for Intercom	183981-101	KTU, T-T adapter. One required per system. (Mounts on 183977-101 KTU.)
Dial Tone and Ringback for Intercom Calls	183973-101	KTU, Call-Announcing. One required per system. (Call Announcer not used. KTU strapped for ringback.) 18-contact P.C. board.
Call Announcing with Dial Tone and Tone Burst	183973-101	KTU, Call-Announcing. One required per system. (A call announcer is required at each sta- tion.) 18-contact P.C. board.
		NOTE: A system may be mixed; five stations signaled by call announcing and five by buzzers (or ringers if a ringing generator is used).
Manual Intercom	000401-00B	KTU, Manual Intercom. One required per manual intercom circuit.
Button Access to a P.A. System for Voice Paging	000401-00B	KTU, Manual Intercom. One required. 18-contact P.C. board. Installs in line card slot.
Dial Access to a P.A. System for Voice Paging	000410-00A	KTU, Paging Adapter. One required. 18-contact P.C. board. Installs in line card slot and uses one intercom number.
		NOTE: The K410A KTU is not required in an all call announcing system (or in a mixed system if a call-announcing number is available).

4.00 INSTALLATION C.O. SERVICE ONLY

PREASSEMBLE KSU

4.01 The power supply, interrupter card, power cord, and two plastic push-fasteners are packed in the KSU.

4.02 After removing the KSU from the carton, place it on a level work surace with the cover up.

4.03 Press inward on the center section of the bottom of the cover to unlatch it and lift the cover straight up and set it aside.

4.04 Check that the following items are included then set them aside until they are called for:

(1) 3-conductor power cord.

(2) One small envelope containing two plastic push fasteners. (These may be included in power supply carton.)

(3) One carton containing the KSU power supply (183969-101).

(4) One carton containing the interrupter card (183965-101).

Install Power Cord in KSU

(Tools required: one thin blade slot screwdriver.)

4.05 Turn the KSU over so the internal wiring is up.

4.06 Remove one of the two screws that secure the power cord retainer bar at the bottom left of the KSU and loosen the second screw.

4.07 Insert the plastic jack of the power cord through the rectangular slot on the left side of the KSU and pull the cord through the hole until it extends about 4 inches beyond the top of the KSU.

4.08 Place the power cord in the retainer slot and reinstall the screw removed in a previous step. If a ringing generator will not be used, tighten the screws. If a ringing generator is to be installed, do not tighten the screws at this time.

Install Ringing Generator if Required

(Tools required: one thin blade slot screwdriver and one medium size Phillips screwdriver.)

4.09 Turn the KSU so its front is up.

4.10 Place the transformer on the plastic bosses at the upper right corner of the KSU. (The installation will be neater if the transformer leads are turned to your right.) Secure the transformer with the four long screws included.

4.11 Using the two short screws, attach the two metal clips loosely to the KSU immediately to the right of the transformer.

4.12 Raise the clips and place the capacitor (with wiring toward your left) under them. Tighten the two screws so the two clips fasten over the shoulders of the capacitor and hold it securely.

Install Power Supply

4.13 Insert power supply in the top card slot of the KSU and plug the power cord onto the 3-pin jack.

4.14 If a ringing generator has been installed, push the ringing generator jack onto the 6-pin plug of the power supply.

4.15 Push the two plastic push-fasteners through the two holes near the front corners of the power transformer and through the matching holes of the KSU frame.

4.16 If the power cord retainer bar screws have not been tightened gently pull the slack out of the cord, tilt the KSU up and tighten the two screws.

MOUNT THE KSU

4.17 Mount the KSU on a wall or panel with three bolts or screws. (Be sure the power cord is in place.)

4.18 Connect a 12-gauge wire from the screw terminal on the power supply to an approved earth ground. (This screw terminal is located near the right front corner of the power supply card.)

INSTALL STATION CONNECTING BLOCKS

4.19 Near the KSU, install one split 66-type connecting block for each two stations to be connected. (Figure 3.)

NOTE: If five or fewer stations are to be connected, they can be connected directly to the KSU block. (Figure 2.)



Fig. 2-Typical Installation with Five or Fewer Stations



Fig.3—Typical Installation Using Split 66-Type Blocks for Termination of Station Cable





CONNECT CO/PBX LINES

4.20 Refer to table B and to figure 5 and connect CO/PBX lines to the KSU block.

NOTE: All cabling is brought through the center opening in the bottom of the KSU frame.

CONNECT STATION CABLE TO STATION BLOCKS

4.21 Using the standard wiring pattern, connect each station cable to one side of each split block. (The station leads should be connected to the outer column of clips on each side of the block.) Label the blocks with station number, party name, and lead designations.

CONNECT JUMPERS FROM KSU TO STATION BLOCKS

4.22 Refer to figure 5 and connect individual jumpers from clips of column 5 of the KSU block to each station block. Use loop-through termination on station blocks and connect each jumper to the two center columns of clips of each station block.

CAUTION: Be sure to connect jumpers by designation. These designations are shown in figure 5.

Common Audible Signal

4.23 Two or more lines may be connected to ring at one or more stations. For example: if one station is assigned to answer all calls, the ringer at the station can be caused to ring on all lines by strapping all RC clips together and connecting them to the R1 lead of that station. (This is normally the slate-yellow lead of the station cable which will appear at terminal 40 on the station block.)

INSTALL PLUG-IN KTUs

4.24 Refer to figure 6 and strap interrupter card for 18 Vac or 105 Vac signaling. Insert the interrupter card into the card slot immediately beneath the power supply.

NOTE: Install cards with component side up.

4.25 Insert one 400E line card into each active line card slot. These are the five slots immediately beneath the interrupter.

NOTE: The 400E line card has several strapping options. Refer to the instructions packed with the 400E line card and strap the card for the desired options.

OPERATIONAL CHECKS

4.26 Recheck all connections for correctness and security.

4.27 Plug power cord into 110 Vac service outlet.

4.28 Go off-hook at a station and depress each connected line button in sequence. The busy lamp for the associated line should be on at all connected stations when its button is depressed at any station.

4.29 While off-hook, depress line 1 button and check that you receive dial tone. Blow in your transmitter to check for sidetone in your receiver.

4.30 Check for proper CO ringing by dialing your own number. The lamp associated with the line with the incoming call should flash at all connected stations. Have someone answer at another set and check your talk path by conversing with them.

4.31 Push your HOLD button. The lamps associated with the line you are on should wink at all connected stations.

4.32 Call your business office or other outside number, and advise them that you are going to put them on hold for 30 seconds and ask them to operate their hookswitch several times while they are on hold. Push your hold button and, at the end of 30 seconds, return to the held line by pushing the button associated with that line. The connection should have remained intact. If it does not strapping on the 400E card may be incorrect. (See instructions packed with 400E KTU.

CIRCUIT	DESIG-			CLIP NU	MBER			ROW	
	NATION	1	2	3	4	5	6 (Note 1)	No.	
		Tl	Pin 3	Pin 18			Pin 1	1	
CO/PBX LINE 1		R1	AG	AB	RG	RC	Pin 2	2	
STATION	Т	1T (CI	.IPS 1-5)				Pin 3	3	
CONNECTIONS	R	IR (CI	1R (CLIPS 1-5) Pin 4						
LINE 1	A	1A (CI	.IPS 1-5)				Pin 5	5	
(INCLUDE RG, RC	A1/LG	Al/LG	(CLIPS 1-5)	1			Pin 6 🙀	6	
ON ROW 2)	L	1L (CI	IPS 1-5)				Pin 7 😡	7	
		Tl	Pin 3	Pin 18			Pin 8	8	
CO/PBX LINE 2		R2	AG	AB	RG	RC	Pin 9	9	
STATION	Т	2T (CI	2T (CLIPS 1-5) Pin 10						
CONNECTIONS	R	2R (C1	2R (CLIPS 1-5)						
LINE 2	A	2A (CI	2A (CLIPS 1-5) Pin 12						
(INCLUDE RG,RC	A1/LG	LG (CI	.IPS 1-5)				Pin 13	13	
ON ROW 9)	L	2L (CI	IPS 1-5)			_	Pin 14	14	
		Т3	Pin 3	Pin 18			Pin 15	15	
CO/PBX LINE 3		R3	AG	AB	RG	RC	Pin 16	16	
STATION	Т	3T (CI	.IPS 1-5)				Pin 17	17	
CONNECTIONS	R	3R (CI	LIPS 1-5)				Pin 18	18	
LINE 3	А	3A (CL	IPS 1-5)			ľ		19	
(INCLUDE RG,RC	A1/LG	LG (CI	IPS 1-5)					20	
ON ROW 16)	L	31. (CI	.IPS 1-5)					21	
CA RESET WHEN CALL	CA	BUS (1	-5) CONNECT	ED to 26-6				22	
ANNOUNCERS ARE USED	CA	BUS (1	-5) CONNECT	TED TO 26-6				23	
GROUND	LG	BUS, G	GROUND					24	
								25	
	the second se								

TABLE A1.—KSU Block Layout, Rows 1 thru 25

NOTES:

(1) These clips are internally wired to pins of the option slot as listed.

(2) When a call announcer card is used in the system, the intercom A-lead must be brought from each station to any of these ten terminals.

CIRCUIT	DESIG-			CLIP NU	MBER			ROW
	NATION	1	2	3	4	5	6 (TIE POINTS)	No.
		Т4	PIN 3	PIN 18			Connected to Rows 22,23	26
CO/PBX LINE 4		R4	AG	AB	RG	RC	Connected to Rows 46.48	27
STATION	T	4T (CL	IPS 1-5)				18V ac Buzzer sig.	28
CONNECTIONS	R	4R (CL	IPS 1-5)				CA RST (Call Ann. Reset)	29
LINE 4	A	4A (CL	IPS 1-5)					30
(INCLUDE RG, RC	A1/LG	LG (CL	IPS 1-5)					31
ON ROW 27)		4L (CL	IPS 1-5)				105 V from Ring Gen.	32
		T5	PIN 3	PIN 18			105 V RN Interrup. Ring	33
CO/PBX LINE 5		R5	AG	AB	RG	RC	105 V Input to ICM	34
				<u> </u>	•		Relay Tree	
STATION	Т	5T (CLIPS 1-5)					Aux. Input (18 V Input	35
							to Relay Tree)	
CONNECTIONS	R	5R (CL	IPS 1-5)	Call Ann. Ringback Tone	36			
LINE 5	A	5A (CL	IPS 1-5)				-19V For Call Ann.	37
(INCLUDE RG,RC	A1/LG	LG (CL	IPS 1-5)				L1 Lamp Control (CA)	38
ON ROW 34)	L	5L (CL	IPS 1-5)				L2 Lamp Control (CA)	39
INTERCOM RT	SIG	RT 10	RT 11	RT 12	RT 13	RT 14	RB Tone Burst (CA)	40
(SIGNAL) CONN.	SIG	RT 15	RT 16	RT 17	RT 18	RT 19	RL ICM Relay Control(CA)	41
INTERCOM T,R	Т	INTERC	OM T (CLIP	S 1-5)			FP Breaks ICM Dial Tone	42
STATION	R	INTERC	OM R (CLIP	S 1-5)		,	AO For Mixed System	43
CONNECTIONS	Т	INTERC	OM T (CLIP	S 1-5)			<u>. </u>	44
	R	INTERC	OM R (CLIP	S 1-5)				45
	LG	BUS (1	-5) CONNEC	TED TO 27-6				46
INTERCOM LAMP	L	INTERC	OM LAMP (C	LIPS 1-5)				47
& LAMP GROUND	LG	BUS (1	-5) CONNEC	TED TO 27-6				48
(Note 1)	L	INTERC	OM LAMP (C	LIPS 1-5)			;	49
	,,,, _	•				••••••	Ī	50

Table A2.—KSU Block Layout, Rows 26 thru 50

NOTES:

(1) Terminals labeled LG are connected only to terminal 27-6. When they are to be used for ground, 27-6 must be strapped to 27-2 (AG). When Call Announcers are used, 27-6 must be strapped to 27-3 (AB) and these terminals then provide -24 V TALK BATTERY.

Table B.—KSU Block; CO Lines and Station Termination. (See F	ig. 5	5)
--	-------	----

CIRCUIT		DESIGNATION	601A CONNEC	TION BLOCK	COMMENTS
			ROW	CLIP	
		TI	1	1	
	Line	R1	2	1	
		DR1	1	2	Direct Ring Lead
Linel		IT	3	1-5	
	Station		5	1-5	
1	Connections		6	1–5	One Conn. Per Station
		LG	6	1-5	
		11.	7	1-5	
		RC	2	5	Ring From CO Line Card
		12 12	8		
	Line	R2	9	1	
		DR2	8	2	
Line 2		21	10	1-5	
	Station	28		1-5	
1	Connections	A1	13	1-5	One Conn. Per Station
		LG	13	1-5	
		2L	14	1-5	
		2RC	9	5	
ļ	CO/PRY	2R G	15	4	
	Line	R3	16	i	
	21110	DR3	15	2	
Line 3		31	17	1-5	
	.	3R	18	1-5	
	Station		19	1-5	One Conn. Per Station
	Connections		20	1-5	
		3L	21	1-5	
		3RC	16	5	
	<u> </u>	3RG	16	4	
	Line	R4	20	1	
	Line	DR4	26	2	
Line 4		4T	28	1-5	
		4R	29	1-5	
	Station		30	1-5	One Comp. Per Station
	Connections		31	1-5	One Conn. Let Sidnon
		4L	32	1-5	
		4RC	27	5	
	<u> </u>	4RG	27	4	
	CO/PBX	10 R5	33		
	Luc	DR5	33	2	
Line 5		5T	35	1-5	
	-	5R	36	1-5	
	Station	5A	37	1-5	One Conn. Bor Station
	Connections		38	1-5	One Conn. Per Station
		5RC	34	5	
		5RG	34	4	
	_	T	42,44	1-5	
Dial	Station		43,45	1-5	the with call oppounding card call
Intercom	Connections	lG	A1/LG		Use with carr aniouncing card only
j l		ī	47,49	1-5	
		RT	40,41	1-5	Signal path, stations 10–19
C II	St. C.	AB	46,48	1-5	Connect AB to 27-6
	Connections	REDEI	22,23	1-5	Connect 20-0 10 27-0
Announce	Connections	GROUND	24	1-5	Any ground will suffice
		RT	40,41	1-5	Signal path, stations 10–19
			L	L	

DO NOT CONNECT ANY LEADS TO THIS COLUMN



Fig. 5—CO/PBX Line and Station Connections

DESIG- NATION	terminal in set	MOUNTING CORD	PLUG PIN	CONNECTING CABLE	CONN. BLOCK ROW NUMBER	601A CON ROW	IN. BLOCK TERM.				
١T	11	W-BI	26	W-BI	1	3	1-5				
ip	18	BIW	ĩ	BI -W	2	4	1-5				
14	тн	W-O	27	W-O	3	5	1-5				
Å1	18	0-W	2	0-W	4	6	1-5				
1LG	LG	WrG	28	W-G	5	6	1-5				
11	L1	G-W	3	G-W	6	7	1-5				
21	21	W-BN	29	W-BN	7	10	1-5				
2R	2R	BN-W	4	BN-W	8	11	1-5				
2A 🔰	2H	W-SL	30	W-SL	9	12	1-5				
-	-	SLW (b)	5	SL-W (b)	10	-	-				
2LG	LG	R-BL (c,d)	31	R-8L	11	13	1-5				
2L	L2	BL-R	6	BL-R	12	14	1-5				
31	31	R-O	32	R-O	13	17	1-5				
3R	3R	O-R	7	O-R	14	18	1-5				
3 A	3Н	R-G	33	R-G	15	19	1-5				
-	-	G-R (b)	8	G-R (b)	16	-	-				
3LG	LG	R-BN (c,d)	34	R-BN	17	20	1-5				
31	L3	BN-R	9	BN-R	18	21	1-5				
41	41	R-SL	35	R-SL	19	28	1-5				
4K	4K	SL-R	10	SL-R	20	29	1-5				
4A	4H	BK-BL	30	BK-BL	21	30	1-0				
	Ĩ	BL-BK (b)	11	BL-BK (b)	22	-	1.5				
41.6	LG	BK-U (c,d)	3/	BK	23	31	1-5				
4L	5T	BK-G	30	BK-G	25	42 44	1-5				
50 Z	50	G-BK	12	G_BK	25	42.44	1-5				
54 (1)	54	BK-BN	10	BK-BN	20	1-10					
	511	BN-BK (b)	14	BN-BK	28	-	_				
51G 5	IG	BK-SL (c, d)	40	BK-SI	29	A1/LG	1-5				
51 =	1.5	SL-BK	15	SL-BK	30	47.49	1-5				
-	6	Y-BL (c)	41	Y-BL	31	-	-				
-	5	BL-Y (c)	16	BL-Y	32		-				
AG	4	YO (d)	42	Y-0	33	34	2 (AG)				
AB	3	O-Y (d) (2)	17	0-Y	34	34	3 (AB)				
Hold	LG	Y-G (d)	43	Y-G	35	-					
Lamp	LH	G-Y (d)	18	G-Y	36	-					
-	L2 (e)	Y-BN	44	Y-BN	37	-	-				
-	SG	BN-Y	19	BN-Y	38	-	-				
CARST	RT	Y-SL	45	Y-SL	39	29	6				
CART	RR	SL-Y	20	SL-Y	40	40,41	1-5 (t)				
(b) Spare (Mounting	(b) Spare Conductors. (c) Not Included in 34-conductor Mounting Cord. (d) Not Included in 42-conductor Mounting Cord. (e) On Network. (f) RT Terminal assigned to this station.										

Table C. Station Connections for 5-Line Sets and 174B Call Announcer

NOTES:

(1) Line position 5 is used for intercom. If this station is to be signaled by call announcer, the 5A lead must be connected to terminal 6 of any row 1 through 10.

(2) The O-Y lead, terminal 34 on the station block, supplies AB (A-Battery) to the call announcer.

Table D. Connections to Station blocks, 870, or 2870 Telephones in a 601A Key System.

CIRCUIT DESIG-	MOUNTING	PLUG PIN	RUNNING CABLE	STATION BLOCK	JUMPER ROW	S TO KSU BLOCKS TERMINAL	NOTES
11	W-BL	26	W-BL	1	3	1-5	
1R	BL→W	1	BL-W	2	4	1-5	
1A	W-O	27	W-O	3	5	1-5	
AI	0-W	2	O-W	4	6	1-5	
ILG	W-G	28	W-G	5	6	1-5	
11.	G-W	3	G-W	6	7	1-5	
21	W-BN	29	W-BN	7	10	1-5	
2R	BN-W	4	BN-W	8	11	1-5	
2A	W-SL	30	W-SL	9	12	1-5	
9A or PVL2	SL-W	5	SL-W	10	*	*	
2LG	R-BL	31	R-BL _	11	13	1-5	
2L	BL – R	6	BL-R	12	14	1-5	
3T	R-0	32	R-O	13	17	1-5	
3R	O-R	7	O-R	}4	18	1-5	
3A	R-G	33	R-G	15	19	1-5	
8A or PVL1	G-R	8	G-R	16	*	*	
31 G	R-BN	34	R-BN	17	20	1-5	
31	BN-R	9	BN-R	18	21	1-5	
4T	R-SI	35	R-SI	19	28	1-5	
AP	SI_R	10	SI -R	20	29	1-5	
40		36	BK_BI	21	30	1-5	
4A 7A		11	BL_BK	27	_	-	
		27	BK O	22	31	1-5	
410	BK-U	12		23	32	1-5	
4L		20		25	35	1-5	
50	C PK	13	G-BK	25	36	1-5	
JK	G-DN	20	DV DNI	20	37	1-5	
5A	BK-DIN	37		27	1.10	6	(1) (ICM)
6A	BIN-BK	14		20	38	1-5	(in theme
SLG	BK-SL	40		27	20	1-5	
5L	SL-BK	15	JL-BN	21	42 14	1-5	(1) $(1CM)$
61	Y-BL	41	Y-BL	21	12 45	1-5	
6R	BL-Y	10	BL-Y	32	43,45	1-5	(I) (ICM)
AG	Y-0	42	Y-0	33	27	2	(2)
AB	O-Y		0-Y	34	27	NAC	(2) ((CAA)
6LG	Y-G	43	Y-G	35	- 40		
6L	G-Y	18	G-Y	30	47,49		
71	Y-BN	44	Y-BN	<u>ل</u> ار کار	-	-	
7R	BN-Y	19	BIN-Y	38	-		
B1	Y-SL	45	Y-SL	39	-	KG	(4)
RI	SL-Y	20	SL-Y	40	· -	ĸĊ	(4)
7LG	V-BL	46	V-BL	4	-	-	
7L	BL-V	21	BL-V	42	-		
81	V-0	47	V-0	43			
8R	0-V	22	0-V	44			
RT	V-G	48	V-G	45	40,41	SIG	
9L	G-V	23	G-V	46	L *		
CA RST	V-BN	49	V-BN	47	29	0	
8L	BN-V	24	BN-V	48	•		
9T	V-SL	50	V-SL	49		*	
2R	SL-V	25	SL-∨	50		*	
					l		

* Do not connect these leads.

(1) Line position 6 is used for intercom in 601A system. If this station is to be signaled by call announcer, the 6A lead must be connected to terminal 6 of any row 1 through 10.

(2) The O-Y lead, terminal 34 on the station block, supplies AB (A-Battery) to the call announcer.

(3) Connect a jumper from terminal 35 to any spare A1/LG terminal clip on the KSU block. If

there are no spare A1/LG clips, this jumper may be omitted as all LG leads are commoned in the phone.

(4) Connect RG and RC jumpers as shown to have CO ringing at this station. If this station is to have common-audible signaling for CO lines, connect the RC jumper to all RC terminals at the KSU block. If this station is to be signaled by ringer on intercom calls, connect the RC jumper to the appropriate intercom RT (SIG) terminal.





Fig. 6—Strapping for Interrupted Signal (Ringer or Buzzers) on Interrupter Card.

5.00 INSTALLATION, TO ADD DIAL INTER-COM

CONNECTIONS

General

5.01 The following connections must be made for each intercom station:

T (Tip) R (Ring L (Lamp) LG (Lamp Ground) SIG (Signal) RG (Ring Ground)

5.02 All connections are common except SIG. Individual signal leads must be connected from each station to the appropriate SIG clip on the KSU block. Station 10 must connect to SIG "0", 11 to SIG "1", 12 to SIG"2", and so forth.

5.03 In addition to station connections: if 5 or fewer stations are to be connected, install a jumper from row 27, clip 6 to row 27, clip AG. This jumper causes ground to appear at all clips on rows 46 and 48. If more than 5 stations are to be connected, install a jumper from any AG clip to the signal ground terminal (B1) on both sides of all station blocks. This is normally terminal 40 (YL-SL).

To Use Buzzers for Signaling

5.04 If buzzers are to be used for signaling, install a jumper from row 28, clip 6 to row 35, clip 6.

To Use Ringers for Signaling

5.05 If ringers are to be used for signaling, install a jumper from row 34, clip 6 to row 32, clip 6. (Do not strap 28-6 to 35-6 as instructed in paragraph 5.04.) A ringing generator must be installed in the KSU to provide 105 Vac, 30 Hz.

To Add Tel-Touch (Tone) Dialing

5.06 To adapt the intercom for tone dialing, install the Tel-Touch adapter card (183981-101) on the intercom card:

(1) Remove the "W" plug from the intercom card (see fig. 8).

(2) Place the two cards with components facing each other and with the small end of the Tel-Touch card toward the edge connector of the intercom card.

(3) Insert the two rows of pins on the Tel-Touch card into the two connectors on the intercom card making sure that no pins slip outside of the connectors.

INSTALL DIAL INTERCOM CARD

5.07 Refer to figure 8 and strap intercom card as required. Insert the dial intercom card in the bottom slot of the KSU.

TO ADD DIAL TONE AND RINGBACK TO IN-TERCOM

5.08 Connect intercom as instructed in paragraph 5.01.

5.09 Add jumpers to KSU block as shown in figure 9.

5.10 Return the A-lead associated with the intercom button on each phone to an individual clip in column 6, rows 1 through 10 as shown in figure 9.

5.11 Refer to figure 12 and strap the call announcing card for "Ringback". This is option A-B.

5.12 Install the call announcing card in the option slot of the KSU. (Second slot from bottom.)

5.13 Refer to figure 8 and remove X, Y, and Z straps from the intercom card and reinstall it in the KSU.

NOTE 1: The numbers under the Signal Lead Pins on rows 40 and 41 correspond to the intercom number for the station connected to that pin. EXAMPLE: Under pin 2 or row 40 is a 1, the intercom number for the station connected to that pin will be 11. A (1) precedes the number under the pin to produce the intercom number for that station.

NOTE 2: Refer to Figure 8 for strapping required on intercom card.

NOTE 3: To have dial tone and ringback on intercom, the call announcer card must be installed even if call announcers are not used. The call announcer card is installed in the option slot, and wiring on the connecting block is as shown on figure 9. Strap the call announcing card for ringback (figure 12).

NOTE 4: For 18 Vac buzzer signaling, install jumpers 28-6 to 35-6. For 105 Vac ringer signaling, install jumper 32-6 to 34-6. Do not install both jumpers.



Fig. 7—Strapping and Connections for Five Intercom Stations with Buzzer or Ringer Signaling.



Fig. 8—Strapping options on Intercom Card

NOTE 1: For buzzer signaling, install jumper from row 34 pin 6 to row 28 pin 6.

NOTE 2: For Ringer signaling, install jumper from row 34 pin 6 to row 32 pin 6.

NOTE 3: Extend jumper from row 18 pin 6 to any AB clip.

NOTE 4: Strap call announcing card for "Ringback".



Fig. 9—Jumpers to Add Dial Tone and Ringback for Dial Intercom

6.00 CALL ANNOUNCING

GENERAL

6.01 The call announcing card may be used in any one of three applications:

(1) To provide dial tone and ringback for dial intercom —using no call announcers.

(2) To provide Call Announcing (dial tone, tone burst, return tone, and handsfree answerback at all intercom stations). Each station must be equipped with a 174B Call Announcer or a telephone with integral Call Announcer.

(3) Split System: Call Announcing and Buzzers or Ringers. To provide dial tone, tone burst, and return tone to all intecom stations; to provide call announcing with handsfree answerback to a maximum of five stations. The remaining five stations will be signaled by buzzer or ringer.

TO PROVIDE CALL ANNOUNCING FOR ALL STATIONS

6.02 Install jumpers and A-leads as shown in figure 10.

6.03 If 5-line telephones and 174B call announcers are used, refer to table C and connect all jumpers between the station blocks and KSU block as shown.

6.04 If 10-button telephones with integral call announcers are used, refer to table D and connect jumpers between the station blocks and KSU block as shown.

6.05 Individual jumpers are required from each station block for intercom A-leads and for CA RT (SIG) leads.

A-leads: Install a jumper from the intercom A-lead terminal on each station block (terminal 27 for 5-line sets, terminal 28 for 9-line sets) to an individual clip in column 6, rows 1 through 10.

CA RT leads: Install a jumper from the CA RT terminal on each station block to the "SIG" terminal (on the KSU block) assigned to that station. This is terminal 40 on the station block for 5-line sets and terminal 45 on the station block for 10-button sets with integral call announcer.

6.06 Refer to figure 12 and strap the call announcing card for "Tone Burst" and install the call announcing card in the option slot of the KSU. (Second slot from bottom.)

6.07 Refer to figure 8 and remove X, Y, and Z straps from the intercom card and install the card in the bottom slot of the KSU.

SPLIT SYSTEM, CALL ANNOUNCING AND SIGNALING BY BUZZER OR RINGERS

6.08 With this arrangement, each odd numbered station must be equipped with a call announcer, and each even numbered station must be equipped with a buzzer or ringer.

6.09 Refer to figure 11 and install jumpers as shown.

6.10 Connect intercom and call announcer leads as shown in figure 11.

6.11 Refer to figure 12 and strap call announcing card for "Tone Burst", and insert the card in the option slot of the KTU.

6.12 Refer to figure 8 and remove the X, Y, and Z straps from the intercom card and install the card in the bottom slot of the KSU.

TO CONNECT 174B CALL ANNOUNCER TO 6-BUTTON TELEPHONE SETS

6.13 The 174B Call Announcer for voice signaling on intercom connects to K565 or K2564 subsets as follows:

(1) Remove Red ringer lead from RR on Terminal Board. Tape and store lead.

(2) Remove Black ringer lead from RT on Terminal Board. Tape and store lead.

(3) Connect Green CA lead to RR on Terminal Board.

(4) Connect Red lead to RT on Terminal Board.

(5) Connect Black (-24 VDC) lead to 3 on Terminal Board.

(6) Connect Yellow (GND) lead to 1B on Terminal Board.



NOTE: If more than 5 stations are to be connected, all station connections except A-leads and CA RT leads should be wired in series to station blocks. A-leads and RT leads require individual jumpers to the KSU block.

Fig. 10—Connections for Five Call Announcing Stations Using Call Announcing Only for Station Signaling on Intercom Calls.

INTERCOM

This Figure shows five stations connected in a mixed intercom system, two call announcers and three buzzers.

NOTE 1: For buzzer signaling, install jumper from row 34 pin 6 to row 28 pin 6.

NOTE 2: For ringer signaling, install jumper from row 34 pin 6 to row 32 pin 6.

NOTE 3: Refer to figure 12 for additional strapping required for call announcing.

NOTE 4: Ground buzzers on any available lamp ground on rows 6, 13, 20, 24, 31, or 38, (Pins 1-5). Ground Ringers on any available RG terminal.

CAUTION: Call announcers must be on odd stations in a mixed system. Refer to figure 13 for additional information.



Fig. 11-Jumpers to Add Call Announcing Card for Mixed System.

This Figure shows five stations connected in a mixed intercom system, two call announcers and three buzzers.

NOTE 1: Ground buzzers on any available lamp ground on rows 6, 13, 20, 24, 31, or 38, (Pins 1-5). Ground Ringers on any available RG terminal.

NOTE 2: Refer to figures 5 and 8 for additional strapping required for ringer or buzzer signaling.

NOTE 3: The numbers under the Signal Lead Pins on rows 40 and 41 correspond to the intercom number for the station connected to that pin. EXAMPLE: Under pin 2 or row 40 is a 1, the intercom number for the station connected to that pin will be 11. A (1) precedes the number under the pin to produce the intercom number for that station.

CAUTION: Call Announcers must be odd stations in a mixed intercom system. Refer to figure 8 for additional information.



Figure 11B-Station connections, Intercom with buzzers (or Ringers) and call announcers.



Fig. 12-Strapping Options on Call Announcer Card

7.00 AUXILIARY FEATURES

MUSIC-ON-HOLD (K403A KTU)

7.01 Music-on-hold can be provided by installing a K403A music-on-hold card in the option slot of the KSU or in a separate card-mounting facility such as a K359A one-card panel.

7.02 If the KSU option slot is used, pin 6 of rows 1 through 18 must be connected as shown in Table E.

7.03 If a separate mounting facility is used for the K403A KTU, the same connections must eventually be made to pins 1 through 18 of the K403A card connector.

MANUAL INTERCOM (K401B KTU)

7.04 Manual intercom can be installed so all stations are connected to one common talk path, or it can be installed to provide a private talk path between two stations.

7.05 After determining the CO/PBX slot to be used, install a jumper from AB to 18 and a jumper from AG to 3 for that line position on the KSU connecting block.

7.06 Four station connections must be made for each phone to be connected to the manual intercom: TIP, RING, LAMP, and LAMP GROUND. Refer to table B and the telephone circuit diagram and connect the leads according to their designations. As many as five stations can be connected to the KSU block. If more stations are to be connected, multiple these connections, to one or more station blocks.

7.07 An external signaling arrangement of buttons and buzzers must be separately provided and installed. (See KSP401-00B.)

BUTTON-ACCESSED PAGING ADAPTER (K401B KTU)

7.08 Pushbutton access to a PA system for voice paging from intercom stations can be provided by installing a K401B KTU.

7.09 The K401B KTU can be installed in any vacant CO/PBX line card slot of the KSU.

7.10 After determining the CO/PBX slot to be used, strap AB to 18 and AG to 3 at that line position on the KSU block.

7.11 Convert a spare button of each telephone set to non-locking operation by unscrewing the interlock pin from the plunger until the pin clears the interlocking slides.(See instructions packed with subset.)

7.12 Connect the T and R leads from this button to T and R of the K401B KTU on the KSU block (or station block if separate blocks are used).

7.13 Connect a 1 Mfd capacitor to both inputs to the amplifier (fig. 13).

7.14 Button-accessed paging is accomplished by going off-hook, and holding down the designated non-locking button, and talking into the telephone handset. The user's voice will go out over the PA system.



Fig. 13—Schematic, Button-Accessed Paging

PIN	LEAD DESIGNATION	OPTION SLC	T TERMINALS	JUMPER T	0
NO.		ROW	TERMINAL	ROW	TERMINAL
1	First Output	1	6	1	3
2	Pair	2	6	3	1-5
3	Second Output	3	6	8	3
4	Pair	4	6	10	1-5
5	Third Output	5	6	15	3
6	Pair	6	6	17	1-5
7	Input	7	6	Music	
8	Pair	8	6	Source	· · · · ·
9	-24 ∨dc	9	6	2*	3
10	-	10	6	NC	-
11	Ground	11	6	2 *	2
12	–	12	6	NC	-
13	Fourth Output	13	6	26	3
14	Pair	14	6	28	1–5
15	Fifth Output	15	6	33	3
16	Pair	16	6	35	1-5
17	Sixth Output	17	6	NC	-
18	Pair	18	6	NC	-

Table E.—Connections to Add A K403A Music-On-Hold KTU to Option Slot

* These may be any available AB and AG pins.

DIAL-ACCESSED PAGING

General

7.15 Dial access to a customer furnished PA system for voice paging from intercom stations can be provided by one of the following methods:

(1) In a system using ringers or buzzers for intercom signaling (with or without dial tone and ringback) a K410A Paging Adapter KTU may be installed in any vacant line card position. Any unused intercom number may be assigned to the feature.

(2) In a system using all call announcers for intercom signaling, an intercom number may be assigned to voice paging.

(3) In a mixed system, using call announcers at some stations and ringers or buzzers at other stations, either of the above arrangements may be used. Arrangement (1) must be used with an even number assigned to voice paging, and arrangement (2) requires and odd number assigned to voice paging.

Installation of K410A KTU (All buzzer or ringer signaling or mixed system.)

Connect Amplifier

7.16 Determine CO/PBX slot to be used and connect "COT" and "COR" of that line position to the amplifier inputs.

Connect Intercom "SIG" Leads

7.17 Determine the intercom number to be used for voice paging and connect the corresponding "SIG" clip, on row 40 or 41, to the "RC" clip of the line position used.

NOTE: In a mixed system, an even number must be assigned to voice paging feature.



Fig. 14—Connections for Dial-Accessed Paging Adapter (K410A). (Using Line Position 4 for the K410A KTU and Intercom Number 18 (SIG 8) for Dial Access Number.)

"U".

Connect T, R, and A Leads

7.18 Connect any "T" clip of line position used to any intercom "T" clip on row 42 or 44.

7.19 Connect any "R" clip of line position used to row 30, clip 6, and connect row 31, clip 6, to any intercom "R" clip on row 43 or 45. (A 100-ohm resistor is factory wired between 30-6 and 31-6 clips.)

7.20 Connect any "A" clip of line position used to any clip in column 6, rows 1 through 10. (To simplify trouble-shooting, use clip 1 through 10 that corresponds to "SIG" terminal used. For example, if SIG 8 is used, connect A lead to clip No. 8.)

Connect "AG" to "RG"

7.21 Connect "AG" clip to "RG" clip at line position used.

Strap K410A KTU for Proper Options

7.22 Refer to the instruction sheet packed with the K410A KTU and strap the KTU for "Option W".

7.23 If 18 Vac is used for intercom signaling, strap the KTU for "Option V".

7.24 If 105 Vac is used for intercom signaling, strap the KTU for "Option U".

Install K410A KTU

7.25 Insert the K410A KTU into the CO/PBX line position assigned to it.

Dial Accessed Voice Paging Using Call Announcing Intercom Number

NOTE: If the system uses all call announcers for intercom signaling, any intercom number may be assigned to voice paging. If the system is mixed (call announcers and ringers or buzzers) an odd intercom number must be assigned to voice paging.

Connect Call Announcing "SIG" and "AG" to Amplifier

7.26 Refer to figure 15 and connect the SIG clip assigned to voice paging and any AG clip to the amplifier input.



Fig.15-Wiring Connections For Voice Paging With A System Using All Call Announcers.



Fig. 16-KSU Internal Wiring CO Lines, Intercom RT 15, 16, 17, (Viewed from Rear Of KSU)



Fig. 17—Internal Wiring, Power Supply, Interrupter, Line Card, Intercom RT 12, 13, 14

(Viewed from Rear of KSU)



Fig. 18—Internal Wiring, Station Connections and Intercom (Partial) (Viewed from Rear of KSU)



Fig. 19—Internal Wiring, 10 Vac Lamping, Intercom T and R. (Viewed from Rear of KSU)



Fig. 20-KSU Internal Wiring. CO Lines, Intercom RT 15, 16, 17 (Viewed From Rear Of KSU)