

Section K  
of TELEPHONE EQUIPMENT  
& SUPPLIES CATALOG

ISSUED JULY, 1970

## KEY SYSTEMS

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## AUTOMATIC ELECTRIC COMPANY

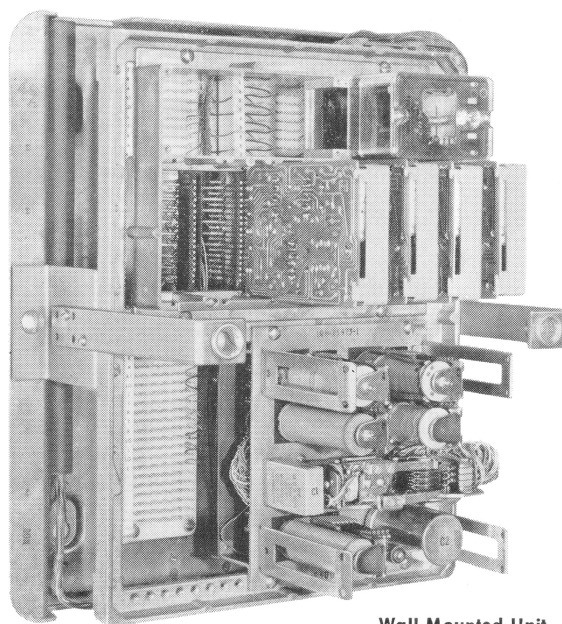
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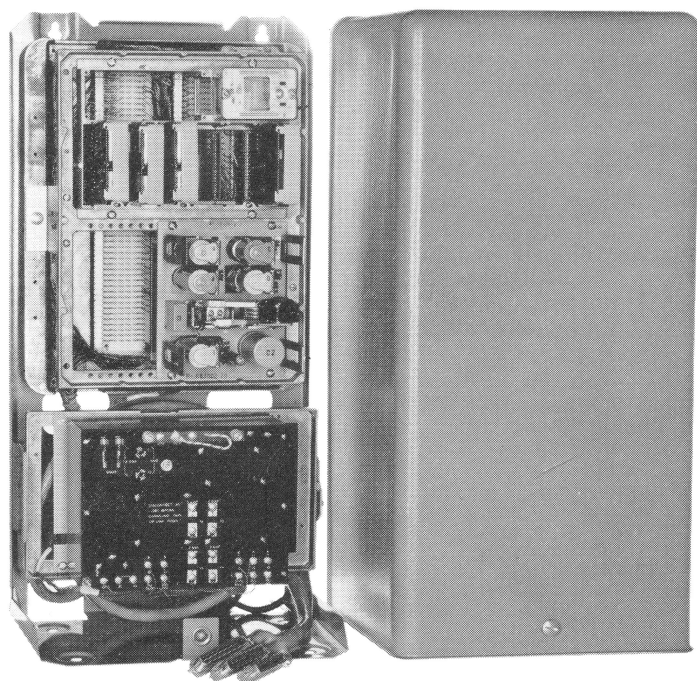
**Plug-In 10A2 Key Telephone Systems**



**Type 860  
Call Commander®  
Telephone**



**Wall-Mounted Unit**



**Floor/Wall-Mounted Unit and Cover**



**Type 186  
Telephone**

## Plug-In 10A2 Key Telephone Systems

### For Small Businesses—No Attendant Required

The Type 10A2 Key Telephone System is a private voice communication network using pushbutton telephones. It provides multiple outside or PBX/PABX lines and intercom service at each station. This improved version of the Type 10A1 system is compatible with other key telephone equipment. It can be used to provide additional services in large PABX installations.

The system includes factory-wired key service units, quick-connect terminals, plug-ended telephones, plug-in adapters, plug-in running cable and plug-in connector blocks. It can provide intercommunications for nine key telephone stations on a dial selective basis. If more than nine-station intercom-

munications is required, additional Type 16A intercom equipment may be used.

Lightweight equipment and rugged components perform system functions. Miniature relays and solid state components reduce weight and conserve space. Components, interchangeable to reduce parts inventory, are wired and tested at the factory to save installation time. Plug-in elements provide faster installation, phone relocation, and reduce the down time.

Twelve pre-wired key service units are available from stock to fit individual requirements. Units are constructed in modules and use plug-in printed circuit cards to economically provide services as needed.

**Basic Wall-Mounted Unit.** Six-lines; any combination of C.O. or intercom. Hinged-gate mounting frame with quick-connect terminal block, plug-in printed circuit card receptacles, and plug-in signal interrupter. Either a dial intercom or a power supply can be mounted internally. Unit measures 16¾ inches high, 13½ inches wide, 9½ inches deep, including cover.

**Floor/Wall-Mounted Unit.** Contains the basic unit in a cabinet assembly. This provides space for additional equipment. Unit measures 28 inches high, 14 inches wide, 9½ inches deep, including cover.

### 10A2 Key Service Unit Pre-Wired Packages

#### Without Circuit Cards; with Signal Interrupter

<b>H-886501-2</b>	Wall-mounted—basic unit . . . . .	each	<b>\$95.00</b>
<b>H-886501-6</b>	Wall-mounted—basic unit; power supply S-418035 (buzzer signaling) . . . . .	each	<b>143.50</b>
<b>H-886501-24</b>	Wall-mounted—basic unit, dial intercom . . . . .	each	<b>144.95</b>
<b>H-886501-3</b>	Floor/wall cabinet—basic unit . . . . .	each	<b>97.55</b>
<b>H-886501-34</b>	Floor/wall cabinet—basic unit, dial intercom . . . . .	each	<b>161.70</b>
<b>H-886501-4</b>	Floor/wall cabinet—basic unit, power supply S-418035 (buzzer signaling) . . . . .	each	<b>162.75</b>
<b>H-886501-44</b>	Floor/wall cabinet—basic unit, dial intercom, power supply S-418035 (buzzer signaling) . . . . .	each	<b>205.50</b>
<b>H-886501-5</b>	Floor/wall cabinet—basic unit, power supply S-418034, 30-cycle ringing generator . . . . .	each	<b>185.75</b>
<b>H-886501-54</b>	Floor/wall cabinet—basic unit, dial intercom, power supply S-418034, 30-cycle ringing generator . . . . .	each	<b>241.15</b>
<b>H-886502-34</b>	Floor/wall cabinet—basic unit, dial intercom, connector cable . . . . .	each	<b>215.00</b>
<b>H-886502-44</b>	Floor/wall cabinet—basic unit, dial intercom, power supply S-418035, (buzzer signaling), connector cable . . . . .	each	<b>263.50</b>
<b>H-886502-54</b>	Floor/wall cabinet—basic unit, dial intercom, power supply S-418034, 30-cycle ringing generator, connector cable . . . . .	each	<b>286.50</b>

## Line Equipment for Both the 10A2 and 10A1 Key Systems

## Automatic Tie Line Units

Links a key system directly to another key system or PBX/PABX. Requires line pickup key. No hold feature. All stations may have access to tie line; automatic simultaneous audible and visual signaling in both directions. Order for each end of each tie line.

**H-883002-3**.....each **\$36.90**

## Ringdown Tie Line Units

Connects a key system directly to another key system or local battery PBX. Requires a line pick-up key and a signaling key at all stations with access to the tie line. No hold feature. Order for each end of each tie line.

**H-883002-4**.....each **\$35.95**

## Station Line Units

Connects a key system and a remote station, usually a non-key type instrument. Signaling is ringdown toward remote station, automatic back to key system. Order for key system end of each line. Requires line pickup key and signaling key.

**H-883002-5**.....each **\$37.40**

## 16A Intercom Equipment for Both the 10A2 and 10A1 Key Systems

## Selector Units

One common talking dial intercom circuit for maximum of nine individually signaled stations. Can be expanded beyond nine stations with Transfer Unit. For selector-only, single-link or two-link intercom.

**H-883002-70**.....each **\$64.20**

## Transfer Units

Extends intercom service of Selector Unit beyond original nine stations. Order one for first nine additional stations, and one for each eighteen additional stations thereafter on a selector-only, single-link or two-link intercom.

**H-883002-16**.....each **\$25.65**

## Lamp-Flashing Control Units

Causes the intercom lamp to flash at called station until answered. Used with common talking dial intercom. Order one for each three stations.

**H-883002-8**.....each **\$40.70**

## Single-Link Units

Used with Selector Unit to provide a private talking intercom circuit for maximum of nine stations. Originating and called station converse privately; other stations locked out. Can be expanded beyond nine station capacity with Station Signal Unit H-883002-15.

**H-883002-14**.....each **\$264.85**

**Station Signal Units.** Used with Single-Link Unit, Selector Unit and Transfer Unit to extend private intercom service to three additional stations. Order one for each three additional stations.

**H-883002-15**.....each **\$78.20**

## Two-Link Units

Used with Selector Unit to provide two private talking intercom circuits for maximum of nine stations. Can be expanded beyond nine stations with Station Signal Unit H-883002-23.

**H-883002-22**.....each **\$368.90**

**Station Signal Units.** Used with Two-Link Unit, Selector Unit and Transfer Unit to extend private intercom service to three additional stations. Order one for each three additional stations.

**H-883002-23**.....each **\$112.80**

## Tone and Flashing Control Units

Flashing intercom-line lamp, dial and busy tone for a single or two-link intercom network. Requires one Audible Signal and Tone Control Unit H-883002-27 to obtain busy tone in a two-link network.

**H-883002-69**.....each **\$36.78**

## Audible Signal and Tone Control Units

Allows telephone ringer or buzzer to be used as audible signal for both outside line and intercom. Order one for each two stations to be signaled from two different signaling sources. Contains relay for use with Tone and Flashing Control Unit in a two-link intercom network. Order one for system.

**H-883002-27**.....each **\$29.60**

## Camp-On Control Units

Permits an intercom station to override busy lamp indication and connect to intercom system without interfering with existing call or calls. Calling party dials code of desired station. When intercom channel becomes available, called station is signaled audibly and visually as usual. Requires busy tone equipment H-883002-69 and H-883002-27 for each intercom circuit for effective use.

**H-883002-24**.....each **\$67.25**

## Add-On Conference Units

Permits an outside line to be extended to intercom stations which do not normally have access to that line. One unit required per line. Requires one Add-On Conference Control Unit per line to be extended if the added intercom station is in a two-link intercom network.

**H-883002-26**.....each **\$38.65**

## Add-On Conference Control Units

Provides transfer control relays required for use of Add-On Conference Unit in a two-link intercom network.

**H-883002-68**.....each **\$26.43**

## Pre-Set Conference Units

Signals up to six pre-selected intercom stations simultaneously by dialing single digit or by single pushbutton operation. Order one for each group of six stations to be signaled from the same or different control stations on the same network.

**H-883002-17**.....each **\$32.85**



**16A Intercom Equipment for Both the 10A2 and 10A1 Key Systems**

(Continued)

**Long Line and Progressive Conference Units**

Connects off-premise station (90-1000 ohms loop) to intercom network. Order one per off-premise station. Also permits a station in a common talking dial intercom network to dial six other stations in network progressively. For conference, order one for each conference control station in a selector-only intercom network.

**H-883002-25**.....each **\$38.35**

**Single-Digit Control Units**

Equipment for dialing a station in intercom network with more than nine stations on a single-digit basis. Order for each single-digit station required in a two-digit dial intercom network of ten or more stations.

**H-883002-67**.....each **\$28.36**

**Add-On Units for 10A1 Equipment****Basic 3-Line Units**

Line and hold relays for three outside lines, plus lamp-flashing and timeout for two additional outside lines. Order one for each group of five outside lines. Supplement with Individual Line Units as required.

**H-883002-12**.....each **\$119.20**

**Individual Line Units**

Provides line and hold relays for one outside line. Used for expanding Basic 3-Line Unit.

**H-883002-2**.....each **\$33.50**

**Wink On Hold Units**

Equipment for winking signal on hold lamps. Order for each five lines to be held.

**H-883002-10**.....each **\$25.55**

**Common Audible Signal Control Units**

Common control for intermittent signaling on outside lines. Operates in conjunction with two or more central office or PBX lines.

Order for each group of outside lines to be commonly signaled.

**H-883002-11** Provides transmission battery for manually signaled intercom, ringing feed lamp, power supply filter capacitor.....each **\$30.50**

**H-883000-18** Similar to above unit but without transmission battery, ringing feed lamp or power supply filter capacitor. Requires mounting bracket.....each **13.93**

**D-731587-A** Mounting bracket.....each **5.99**

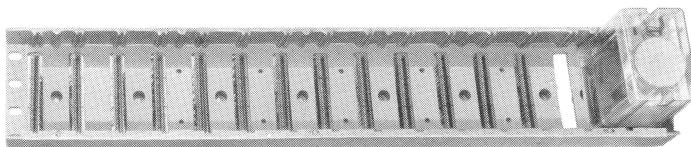
**10A1 Key System Intercom Cable Requirements**

Inside wiring cable. Beige plastic insulation.

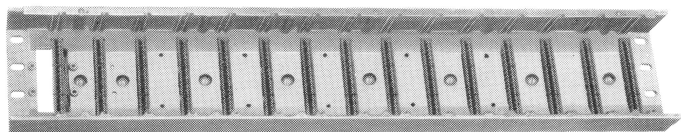
**S-550835** 26 pairs, 22-ga.....per 1000 feet **\$216.37**

**S-550836** 51 pairs, 22-ga.....per 1000 feet **400.40**

## Pre-Wired Panels for Larger Installations



13-Line Panel with Interrupter



15-Line Panel

Accommodate plug-in printed circuit cards. Designed for a key system with large line capacity, or equipment for more than one key system located in the same area. Wire wrapped terminal strips are factory-wired to printed circuit card receptacles. Can be mounted on any equipment rack 23 inches wide, or in apparatus cabinets used with 10A2 and 10A1 Key Systems. 4 inches high, 23 inches wide.

Three externally mounted connecting blocks, S-550510, are required per panel. For installations requiring more than a single panel, an intermediate connecting block field or distribution frame between panels and building cabling system is recommended. 150-conductor cable is required between panels and connecting blocks used with H-886584-1 and H-886583-1 panels only.

Panels may be connected to each other by common lead appearances associated with terminal strip G. Thirteen-line panel is equipped with a heavy duty interrupter to provide lamp wink, lamp flash and interrupted ringing to station equipment. Each of the eight interrupter contacts has current capability to supply 50 lamps. Each heavy duty interrupter can serve a maximum of 200 lamps in lamp wink circuit, 200 lamps in lamp flashing circuit.

**Caution:** When using H-886584-1 or H-886583-1 panels, any combination of central office and manual intercom-circuit cards can be used, with one exception: manual intercom cards cannot be plugged into receptacle 13. Manual intercom cards require additional wiring if used in positions other than receptacles 7 and 8 on either panel.

<b>H-886584-1</b>	13-line panel with heavy duty motor-driven interrupter. Without power cable.....	each	<b>\$99.15</b>
<b>H-886584-5</b>	13-line panel without interrupter, but wired for same. Without power cable.....	each	<b>135.00</b>
<b>H-886583-1</b>	15-line panel without power cable.....	each	<b>75.00</b>
<b>D-543294-B</b>	150-conductor cable; 75 pair, 24 gauge. Used with H-886584-1 and H-886583-1.....	per foot	<b>.90</b>
<b>FD-1058-AS</b>	Heavy duty motor-driven interrupter. For use with H-886584-5 13-line panel.....	each	<b>30.00</b>
<b>D-910037-A</b>	Power cable. For use with H-886584-1, H-886584-5, H-886583-1 panels. Order in required footage. .per ft.		<b>.347</b>

## Plug-In Printed Circuit Cards

Cards slip into pre-wired receptacles. All miniature relays and solid state components necessary for operation of appro-

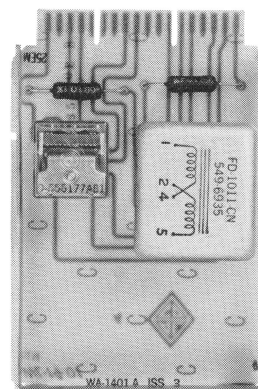
priate line circuits. Cards are added on per-line basis as system expands.  $3\frac{1}{2}$  inches wide,  $5\frac{1}{4}$  inches long.

## Central Office or PBX/PABX Cards

Feature	Option
Time Out Control....	Long Time Delay Short Time Delay
Visual Hold Signal....	Lamp Wink Lamp Steady
Audible Signaling.....	Interrupted Ring Common Audible Ringing Steady Ring

Optimum performance between 20 and 26v., d.c. Do not allow potential to drop below 20 v., d.c.

<b>WA-1400-A</b>	Standard central office or PBX/PABX line card.....	each	<b>\$37.00</b>
<b>WA-1400-D</b>	Use when connected to PABX with station controlled trunk transfer. Reduces susceptibility to induced noises from nearby electrical equipment.....	each	<b>34.50</b>

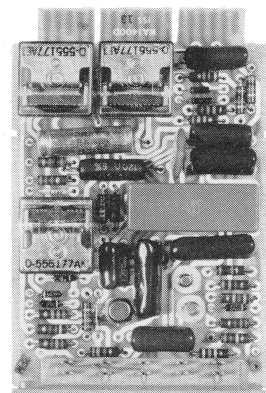


Manual Intercom Card

## Manual Intercom Cards

Fit any line position in basic 6-line unit. Provide common talking circuit with visual busy lamp. Separate audible signaling required.

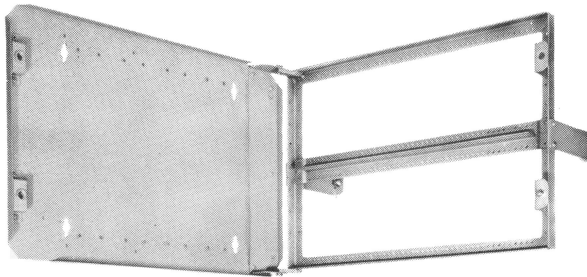
<b>WA-1401-A</b>	Manual intercom line card.....	each	<b>\$15.00</b>
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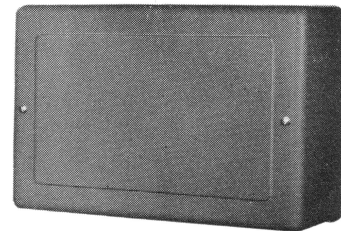
Central Office Card

# Apparatus Cabinets

For 10A2, 10A1 and 16A Equipment



**Hinged Frame and Metal Backplate**

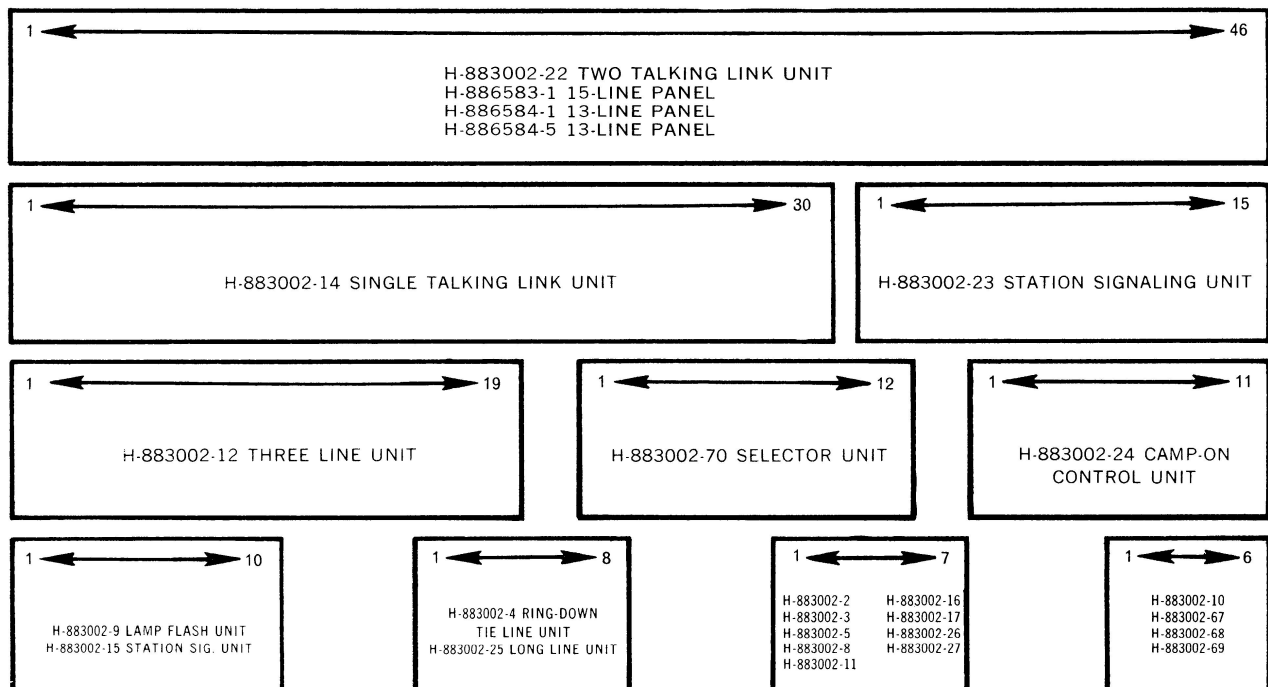
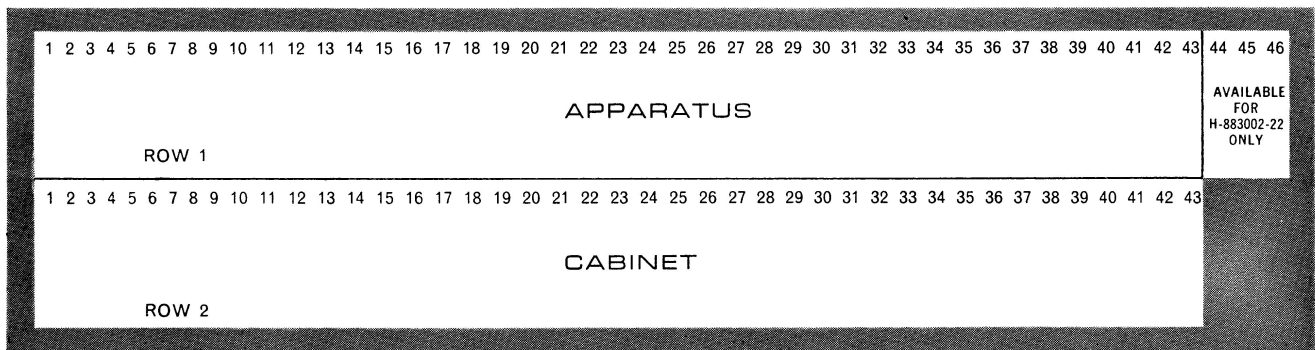


**Cover**

Wall mounted cabinet houses various line and intercom relay units. If more than one cabinet is required, line and intercom units should be mounted separately. Order quantity required for relay equipment initially provided. Hinged frame, metal backplate. Dark gray molded fiberglass cover. 26 1/4 inches long, 17 3/4 inches wide, 9 1/2 inches deep. See drawing for estimating cabinet requirements.

**H-886768-1**.....each **\$35.40**

**Apparatus Cabinet Space Requirements.** Shape, size and figures show relationship between relay units and available mounting space in cabinet.



Prices are subject to change without notice.

### Mounting Racks

10A2 and 10A1 equipment can be mounted on racks when apparatus cabinet is not needed and space is available. Two mounting rows have the capacity of one apparatus cabinet. Rack divider bars are included.

Ordering No.	H-884720-1	H-884720-2	H-884720-3
Height	7'6"	9'0"	11'8"
Width	23"	23"	23"
Number of Rack Mounting Rows	9	11	15
Price each	\$91.65	103.00	131.00

### Power Units

Provide current for signaling, talking, ringing and visual lamps. In large systems order one power unit to serve the line equipment portion of the key system, and one for intercom. Operate from 115 v., 60 cycle a.c.

Ordering No.	Ringing Output	Talking D.C.	Signaling A.C. and D.C.	Cabinet Size Inches	Wt. Lbs.	Price Each
<b>S-418003</b> (FD-1040-CP)	50 Ma., 100-118 v., 30 cycle	1.0 amp., 14-28 v.	0.5 amp., 18-22 v., 60 cycle; 8.0 amp., 9-11 v., 60 cycle; 2.0 amp., 18-28 v., d.c.	12½x8½x5¼	19	<b>\$87.23</b>
<b>S-418004</b> (FD-1040-DB)	50 Ma., 100-118 v., 30 cycle	4.0 amp., 18-30 v.; 4.0 amp., 27-40 v.	0.5 amp., 18-22 v., 60 cycle; 10.0 amp., 9-11 v., 60 cycle	17½x8½x5¼	31	<b>143.79</b>
<b>S-418011</b> (FD-1040-AM)	None	1.0 amp., 14-28 v.	0.5 amp., 18-22 v., 60 cycle; 8.0 amp., 9-11 v., 60 cycle; 2.0 amp., 18-28 v., d.c.	8⅞x8½x5¼	14	<b>64.93</b>
<b>S-418012</b> (FD-1040-DA)	None	4.0 amp., 18-30 v.; 4.0 amp., 27-40 v.; Current divided in two separately fused outputs at 2.0 amps. each	0.5 amp., 18-22 v., 60 cycle; 10.0 amp., 9-11 v., 60 cycle	13⅞x8½x5¼	27	<b>108.44</b>
<b>S-418035</b> (FD-1040-FP)	None	0.9 amp., 18-28 v.	1.4 amp., 16-20 v., 60 cycle; 3.0 amp. continuous, 9-11 v., 60 cycle; 8.0 amp. intermittent, 8.2-11.0 v., 60 cycle; 0.6 amp., 20-28 v., d.c.	7x10x5	11	<b>48.50</b>
<b>S-418034</b> (FD-1040-FM)	50 Ma., 100-118 v., 30 cycle	0.9 amp., 18-28 v.	1.4 amp., 16-20 v., 60 cycle; 3.0 amp., continuous, 9-11 v., 60 cycle; 8.0 amp. intermittent, 8.2-11.0 v., 60 cycle; 0.6 amp., 20-28 v., d.c.	7x10x5	15	<b>71.50</b>

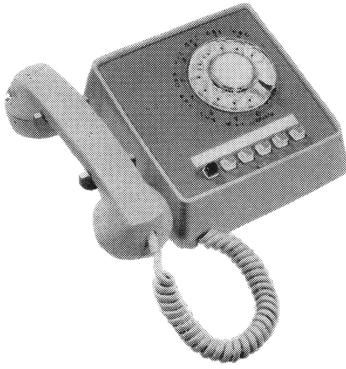
### Pushbutton Requirements

**For Types 86, 186 and 860-A Key Telephones, 86-A Key Adapters and  
AE 6050 and AE 6051 Keysets**

C.O., PBX and PABX lines accessed	1 button for each line.
Holding on C.O., PBX and PABX lines	1 button.
Automatic tie lines accessed	1 button for each line.
Ring-down tie lines accessed	2 buttons for each line.
Station lines accessed	2 buttons for each line.
Dial intercom networks accessed	1 button for each selector-only, single-link or two-link network.
Dial intercom stations signaled direct by pushbutton	1 button for each intercom station to be signaled.
Add-on conference control station	1 button for each outside line to be extended.
Pre-set conference control station	1 button for each conference group to be manually signaled.
Extension cutoff	{ 1 button (limited to Type 86 telephone—one line only). 1 push-pull lever (limited to Type 186 telephone—one line only).
Manual intercom	{ 1 button for intercom. 1 button for signaling.

## Type 186 Telephones

## For Use with Key Systems—Five Lines; One Hold



The Type 186 telephone is available as a wall or desk model in rotary dial or Touch Calling versions. It is for use with AE 10A2, 10A1 and 10A Key Systems, and is compatible with WE 1A2, 1A1 and 1A systems. The phone is equipped with lighted clear plastic pushbuttons to answer and hold up to five lines. Buttons light brightly to designate incoming calls and lines in use. A clear plastic slot in the face plate holds a designation strip for line identification.

Three non-fade color housings and 11 face plates provide customers with 33 attractive color combinations. The strong lucite face plate is quick and easy to change—just release a single spring clip.

The 50-conductor plug-ended line cord makes installation easy and permits flexibility of location. The phone can be easily moved without expensive and time-consuming rewiring. It is supplied with SL ringer, 20-volt buzzer, or a combination ringer and buzzer. A self-compensating network automatically balances for short or long loop to assure best quality transmission.

Keys designated Ps (step 3 of ordering information), can be quickly converted from pickup to pushbutton signaling for operating external signal to secretary, etc. Dial intercom service permits the user to contact any one of the other phones in the subscriber company by pressing the intercom button and dialing the extension code number. NOTE: Dial intercom service is available with the rotary dial version only.

An optional exclusion lever provides complete privacy on the first line by temporarily disconnecting all extension phones

from that line. To exclude stations, pull the lever out; to reconnect the excluded stations during a call, push the lever back in. To reconnect the excluded stations after completing the call, hang up the handset.

NOTE: All telephones include line designation strip. Number cards for Touch Calling phones must be ordered separately; the plastic number card cover is included with the telephone. With rotary dial phones, both number card and plastic cover are included as part of the dial assembly.

## How to Order and Price Type 186 Telephones

Steps	Description	Ordering No.	Price Each
<b>1</b> Phone.	Type 186 Desk Telephone with 6-ft. plug-ended line cord.....	<b>NC-866</b>	<b>\$56.65</b>
	Type 186 Wall Telephone with 6-ft. plug-ended line cord.....	<b>NC-966</b>	<b>56.65</b>
<b>2</b> Color.	Black.....	<b>00</b>	No Charge
	Beige.....	<b>10</b>	No Charge
	White.....	<b>19</b>	No Charge
<b>3</b> Key Assembly.	H-hold; P-pickup; Ps-pickup convertible to signal		
	HPPPsPsPs: Without exclusion key.....	<b>0</b>	No Charge
	With exclusion key.....	<b>1</b>	<b>\$2.00</b>
	PPPPPsPsPs: Without exclusion key.....	<b>2</b>	No Charge
	With exclusion key.....	<b>3</b>	<b>\$2.00</b>
<b>4</b> Rotary Dial or Touch Calling.	Rotary Dial (Letter/Number designations on face plates. Order face plates separately.).....	<b>A</b>	<b>4.50</b>
	Touch Calling Unit (12-button): ABC.....	<b>J</b>	<b>19.95</b>
<b>5</b> Ringer.	Straight-line Ringer.....	<b>SL</b>	<b>3.50</b>
	Ringer and Buzzer.....	<b>RB</b>	<b>4.90</b>
	Buzzer.....	<b>BA</b>	<b>1.40</b>
	Without Ringer or Buzzer.....	<b>XX</b>	No Charge

## Face Plates—Order Separately

Steps	Description	Ordering No.	Price Each	Steps	Description	Ordering No.	Price Each
<b>1</b> Face Plates.	For Rotary Dial:			<b>2</b> Color- (cont.)	Yellow.....	<b>J</b>	No Charge
	1-0.....	<b>D-781005</b>	<b>\$ .65</b>		Med. Blue.....	<b>K</b>	No Charge
	ABC.....	<b>D-781004</b>	<b>.65</b>		Flamingo (Pink-Orange)	<b>L</b>	No Charge
	For Touch Calling Unit (12-button).....	<b>D-781010</b>	<b>.65</b>		White.....	<b>M</b>	No Charge
<b>2</b> Color.	Beige.....	<b>B</b>	No Charge		Gold.....	<b>P</b>	No Charge
	Med. Gray.....	<b>C</b>	No Charge		Brown.....	<b>R</b>	No Charge
	Med. Green.....	<b>D</b>	No Charge		Clear (with black ltrs./nos.).....	<b>X</b>	No Charge
	Vermilion (Bright Red)	<b>F</b>	No Charge		Silver.....	<b>S</b>	No Charge

## Accessories

<b>D-530304-A</b>	Designation Strips (strip of six).....	each	<b>\$ .21</b>
<b>D-490168-A</b>	Plastic Cover for Designation Strip.....	each	<b>.44</b>
<b>D-530400-A</b>	Number Card for Touch Calling Telephones (strip of 45).....	each	<b>.25</b>
<b>D-530394-AR</b>	Plastic Cover for Touch Calling Number Card (pkg. of 25)....	pkg.	<b>3.75</b>

Prices are subject to change without notice.

Plug-In Type 860-B Call Commander® Telephones  
For Use with Key Systems—17-Line Capacity



The Call Commander telephone operates like the Type 86 and 186 telephones, but triples the number of push-buttons. Place, answer and hold calls for as many as 17 outside lines. Automatic ringer or buzzer on incoming central office lines. Lighted clear plastic pushbuttons designate lines in use.

Used with AE 10A2, 10A1 and 10A Key Systems to terminate C.O. lines, tie lines and intercom circuits. Ideal for receptionist use where number of C.O. lines exceeds four. Add-on Conference Unit in 10A2 relay equipment permits connection of any C.O. line on the Call Commander phone to any standard Type 86 or 186 telephone in the system.

The basic unit is equipped with coiled cord, alphabetical number face mats with rotary dial models, plain colored mats

with Touch Calling models, straight-line ringer with control lever, two 6-button keysets, and 120-conductor line cable with plug. Order third 6-button keyset separately. If buzzer desired, order separately.

Colored face mats fit over rotary dial or Touch Calling unit, key-designations and keys. Five mats are furnished with each telephone; silver, gold, blue, green, and ivory. Face mat encircling rotary dial has numbers and corresponding letters printed on it.

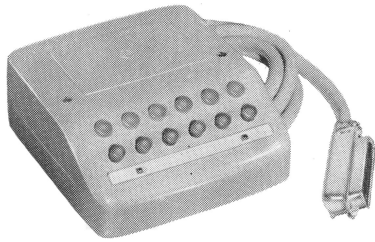
A two-section clear plastic face plate fits over the rotary dial or Touch Calling unit and keys; protects and secures face mat. Six designation strips included.

How to Order and Price Type 860-B Telephones

Steps	Description	Ordering No.	Price Each
1 Phone.	Type 860-B Call Commander Telephone.....	<b>NC-860</b>	<b>\$193.50</b>
2 Color.	Beige.....	<b>10</b>	No Charge
	Dk. Green.....	<b>12</b>	No Charge
3 Special Service.	None offered. NOTE: This suffix must be included in complete Ordering No.....	<b>O</b>	No Charge
4 Rotary Dial or Touch Calling.	Rotary Dial.....	<b>C</b>	<b>\$ 4.50</b>
	Touch Calling Unit (12-button): ABC.....	<b>J</b>	<b>19.95</b>
5 Ringer.	Straight-line Ringer.....	<b>SL</b>	No Charge

Accessories—Order Separately

<b>D-59307-A</b>	6-Button Keyset.....	each	<b>\$29.00</b>
<b>FD-1068-AF</b>	Buzzer (10-30 v., a.c.).....	each	<b>1.10</b>
<b>H-883001-8</b>	Buzzer Mounting Assembly (for older NB-860 Call Commander, Not required on NC-860 model).....	each	<b>.58</b>



## Type 86-A Key Adapters

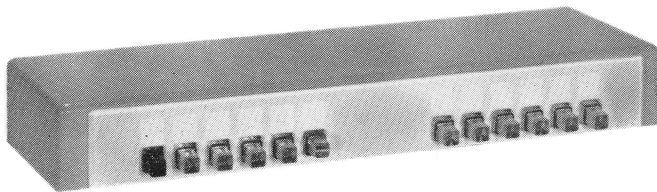
Converts standard wall or desk telephones to keyset operation; use with AE 10A2, 10A1 and 10A Key Systems, or WE 1A2, 1A1, 1A systems. Lamps indicate incoming calls and busy line. Removable clear plastic designation strip for line identification. Mounts on desk or flat vertical surfaces. Mounting holes in base. Screws not included. To attach remove cover.

Molded thermoplastic housing furnished in six colors to match phones. Colors remain bright and will not fade. Black adapter has black pushbuttons; colored adapters have clear plastic pushbuttons. Unit measures approximately 2¼ in. high, 5½ in. wide, 5⅞ in. deep.

## How to Order and Price Type 86-A Key Adapters

Steps	Description	Ordering No.	Price Each
<b>1</b> Key Adapter.	Plug-Ended Key Adapter with 6-ft. cord.....	<b>L-7046</b>	<b>\$39.00</b>
<b>2</b> Key Assembly.	H—hold; P—pickup; Ps—pickup convertible to signal HPPPsPsPs key assembly.....	<b>C</b>	No Charge
<b>3</b> Color.	Black.....	<b>A</b>	No Charge
	Beige.....	<b>B</b>	No Charge
	Med. Gray.....	<b>C</b>	No Charge
	Dk. Green.....	<b>D</b>	No Charge
	Turquoise (Lt. Green).....	<b>G</b>	No Charge
	White.....	<b>M</b>	No Charge

## Type AE 6050 and AE 6051 Keysets



Six or twelve-button units adapt standard non key telephones for use with 10A2, 10A1 and 10A Key Telephone Systems. Provides the same operation and supervision as the Types 186 or 860-A Key Telephones. Designed to operate in conjunction with plug-ended running cables.

Basic unit is adaptable for left or right-hand edge mounting. For right-hand mounting, turn key strip 180 degrees. Illuminated pushbutton service. Detachable clear plastic designation strip. Each pickup key is convertible to signal key.

### Twelve-Button Units

Eleven pickup keys; one hold. Type AE 6051-A.

**L-7047-CA** Black  
**L-7047-CB** Beige  
**L-7047-CC** Med. Gray  
**L-7047-CD** Dk. Green  
**L-7047-CG** Turquoise (Lt. Green)  
**L-7047-CM** White

Twelve pickup keys; no hold. Type AE 6051-B.

**L-7047-DA** Black  
**L-7047-DB** Beige  
**L-7047-DC** Med. Gray  
**L-7047-DD** Dk. Green  
**L-7047-DG** Turquoise (Lt. Green)  
**L-7047-DM** White

**Twelve-Button Unit;** 13⅝x3⅝x1¾ Inches....each **\$70.00**

### Six-Button Units (Not Shown)

Five pickup keys; one hold. Type AE 6050-A.

**L-7047-AA** Black  
**L-7047-AB** Beige  
**L-7047-AC** Med. Gray  
**L-7047-AD** Dk. Green  
**L-7047-AG** Turquoise (Lt. Green)  
**L-7047-AM** White

Six pickup keys; no hold. Type AE 6050-B.

**L-7047-BA** Black  
**L-7047-BB** Beige  
**L-7047-BC** Med. Gray  
**L-7047-BD** Dk. Green  
**L-7047-BG** Turquoise (Lt. Green)  
**L-7047-BM** White

**Six-Button Unit;** 7¼x3⅝x1¾ Inches.....each **\$35.00**

## Plug-Ended Line Cords

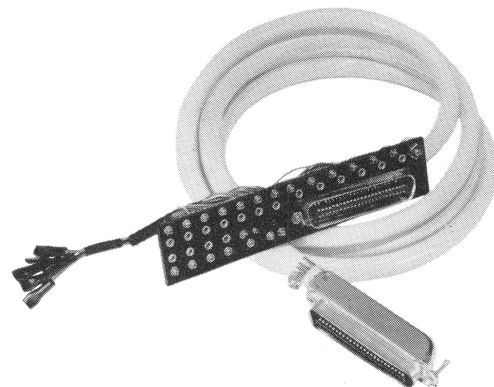
### For Type AE 6050 and AE 6051 Keysets

Order one cord for AE 6050 unit; two for AE 6051 unit.  
 Number of conductors: 50.  
 Termination one end: one plug (male), one terminal strip.  
 Termination other end: one plug (male).  
 Length, 6 feet.

**S-551091** Black.....each **\$12.37**  
**S-551090** Beige.....each **12.57**  
**551092** Med. Gray.....each **12.57**  
**551095** Dk. Green.....each **12.57**  
**551093** Turquoise (Lt. Green).....each **12.57**  
**551094** White.....each **12.57**


For 6051 only: (100-conductor cords)


**S-551097** Black.....each **28.48**  
**S-551096** Beige.....each **28.48**





## Representative 10A2 Key System

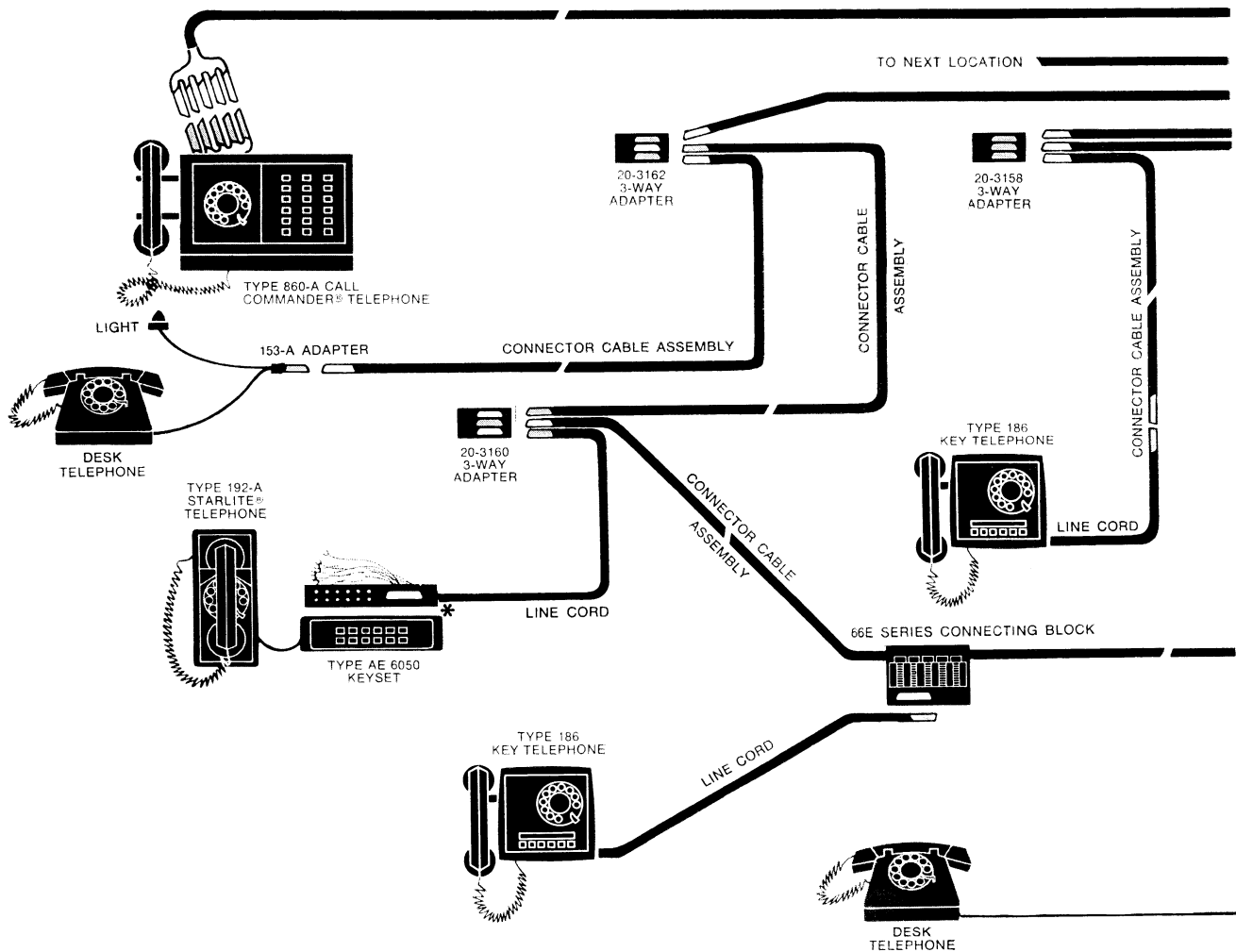
 PLUGS (male)

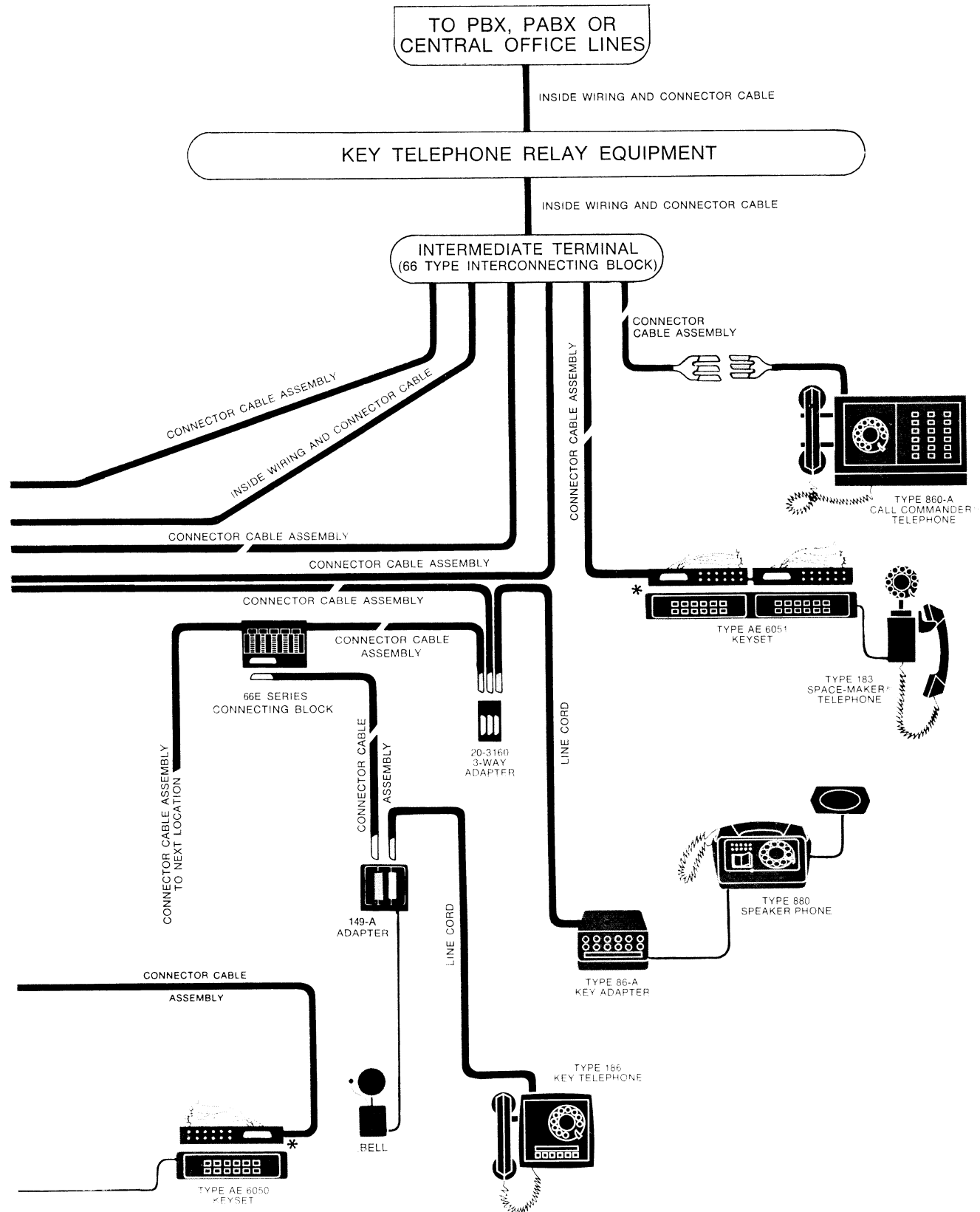
 CONNECTORS (female)

Mating plugs and connectors are shown disconnected in the schematic.

Variations of connector cable assemblies may be ordered to accommodate special requirements.

\*Connector cable assemblies have terminal strips and plugs attached and are wired for assembly to 6 and 12 button AE 6050 and AE 6051 keysets respectively.





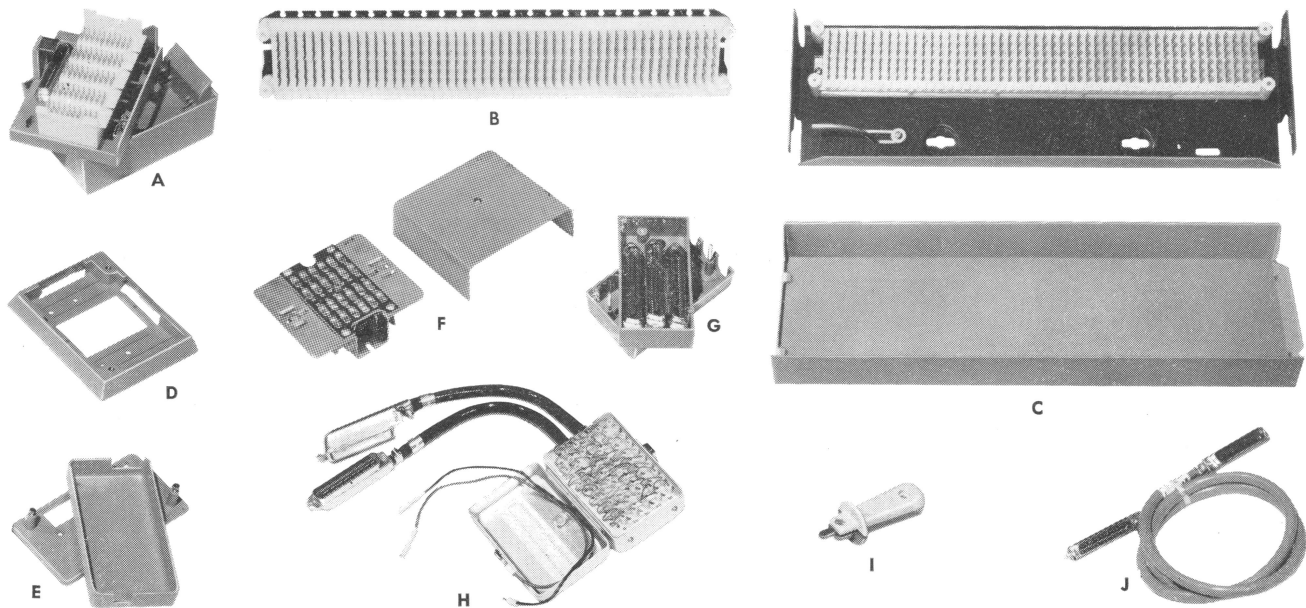


Illustration A—66E3 Terminal Block with Cover; B—66B4-25A Connecting Block; C—66B4-25AB Metal Base-/Cover/Connecting Block; D—152A Plastic Base; E—3293 Base and Cover; F—149A Bridging Adapter with Cover; G—Three-way Bridging Adapter; H—W-50A Test Cord; I—714B Wire Connecting Tool; J—lug-Ended Running Cable.

### Installation Hardware For 10A2 Key System\*

<b>S-550494</b>	Type 66E3-25A terminal block with gray cover. . . . .	each	<b>\$9.39</b>
<b>S-550507</b>	Type 66E3-25A terminal block with cover. 25-pair quick-connect block with 50-terminal connector . . . . .	each	<b>9.39</b>
<b>S-550508</b>	Type 66E4-25 terminal block without cover. For service box mounting of 25-pair quick-connect block and 50-terminal connector. . . . .	each	<b>9.20</b>
<b>S-550489</b>	Type 66B4-25A connecting block (25-pair) . . . . .	each	<b>4.75</b>
<b>S-550491</b>	Type 66B4-25AB metal base, cover and 66A3-25 connecting block. . . . .	each	<b>7.26</b>
<b>S-550492</b>	Type 66B5-50AB metal base, cover and two 66A3-25 connecting blocks. . . . .	each	<b>11.72</b>
<b>S-550050</b>	Type 152A plastic base. Floor/wall mounting for Type 66E3 terminal block. . . . .	each	<b>.80</b>
<b>S-553051</b>	Type 3293 base and cover. Permits wall/floor mounting for one 50-conductor plug and connector. . . . .	each	<b>.99</b>
<b>S-553053</b>	Type 3292 base and cover. Permits wall/floor mounting for triple 50-conductor plugs and connectors. . . . .	each	<b>2.60</b>
<b>S-550061</b>	Type 153A adapter plug. Provides access to four of the connector-terminated cable pairs, when a single or two-line telephone is used without hold or wink. . . . .	each	<b>4.66</b>
<b>S-550060</b>	Type 149A bridging adapter with cover. Permits use of auxiliary apparatus with six-button key telephones or key adapters. Contains 50-terminal connector and 50-terminal plug and service terminal block. . . . .	each	<b>18.00</b>
<b>S-550052</b>	Type 20-3158 three-way bridging adapter with cover. Contains three parallel-wired 50-terminal plugs. . . . .	each	<b>9.90</b>
<b>S-550053</b>	Type 20-3160 three-way bridging adapter with cover. Contains two parallel-wired 50-terminal connectors and 1 parallel-wired 50-terminal plug. . . . .	each	<b>9.90</b>
<b>S-550054</b>	Type 20-3162 three-way bridging adapter with cover. Contains two parallel-wired 50-terminal plugs and 1 parallel-wired 50-terminal connector. . . . .	each	<b>9.90</b>
<b>S-572455</b>	Type W-50A test cord. Permits individual cable conductors to be accessed for testing purposes. . . . .	each	<b>69.30</b>
<b>S-578938</b>	Type 714B wire connecting tool. Used to wire quick-connect terminals. . . . .	each	<b>4.02</b>
<b>S-553050</b>	Type 2857-T connector housing. Used to enclose Call Commander line cord and running cable connectors. . . . .	each	<b>4.96</b>
<b>S-550490</b>	Type 66B4-50A connecting block. . . . .	each	<b>5.93</b>
<b>S-550493</b>	Type 66B4-50AB connecting block. . . . .	each	<b>10.62</b>

\*All items on this page except S-550494 are sand beige.

### 50-Conductor Running Cables\*

#### For 10A2 Key System With Plug (Male) and Connector (Female)

<b>S-550780</b>	5-foot length. . . each	<b>\$8.59</b>
<b>S-550781</b>	15-foot length. . each	<b>10.66</b>
<b>S-550782</b>	30-foot length. . each	<b>13.88</b>
<b>S-550783</b>	60-foot length. . each	<b>19.69</b>
<b>S-550784</b>	100-foot length. . each	<b>28.24</b>

#### With Plug on One End Only

<b>S-550785</b>	50-foot length. each	<b>\$14.12</b>
<b>S-550786</b>	100-foot length. each	<b>24.72</b>

#### With Connector on One End Only

<b>S-550787</b>	50-foot length. each	<b>\$14.24</b>
<b>S-550788</b>	100-foot length. each	<b>24.85</b>

#### With Plug on Each End

<b>S-550789</b>	30-foot length. each	<b>\$13.76</b>
<b>S-550790</b>	80-foot length. each	<b>23.81</b>
<b>S-550791</b>	100-foot length. each	<b>28.12</b>
<b>S-550792</b>	200-foot length. each	<b>49.33</b>

#### With Connector on Each End

<b>S-550793</b>	30-foot length. each	<b>\$14.00</b>
<b>S-550794</b>	80-foot length. each	<b>24.06</b>
<b>S-550795</b>	100-foot length. each	<b>28.36</b>
<b>S-550796</b>	200-foot length. each	<b>49.57</b>

### 150-Conductor Running Cables\*

#### For Use with Call Commander®

#### With Connector on One End

<b>S-550763</b>	50-foot length. each	<b>\$55.24</b>
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#### With Connector on Each End

<b>S-550762</b>	100-foot length ..... each	<b>\$82.23</b>
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# **Plug-Ended Running Cables**

**For Type AE 6050 and AE 6051 Keysets**

All plugs are male; connectors female.

## **Six-Button Units**

Ordering No.	No. of Conductors	Termination One End	Termination Other End	Length Feet	Price Each
<b>S-550768</b>	50	One plug, one terminal strip	Loose conductors	50	<b>\$18.46</b>
<b>S-550769</b>	50	One plug, one terminal strip	Loose conductors	100	<b>28.72</b>
<b>S-550770</b>	50	One plug, one terminal strip	One plug, one terminal strip	30	<b>23.88</b>
<b>S-550771</b>	50	One plug, one terminal strip	One plug, one terminal strip	80	<b>33.21</b>
<b>S-550772</b>	50	One plug, one terminal strip	One plug, one terminal strip	100	<b>37.21</b>
<b>S-550773</b>	50	One plug, one terminal strip	One plug, one terminal strip	200	<b>56.72</b>

## **Twelve-Button Units**

<b>S-550774</b>	100	Two plugs, two terminal strips	Loose conductors	50	<b>\$33.96</b>
<b>S-550775</b>	100	Two plugs, two terminal strips	Loose conductors	100	<b>56.24</b>
<b>S-550776</b>	100	Two plugs, two terminal strips	Two plugs, two terminal strips	30	<b>47.39</b>
<b>S-550777</b>	100	Two plugs, two terminal strips	Two plugs, two terminal strips	80	<b>65.69</b>
<b>S-550778</b>	100	Two plugs, two terminal strips	Two plugs, two terminal strips	100	<b>66.71</b>
<b>S-550779</b>	100	Two plugs, two terminal strips	Two plugs, two terminal strips	200	<b>107.85</b>

## **Line Guard<sup>(TM)</sup>**

### **Automatic Exclusion Systems**



Line Guard provides automatic line exclusion and conversation privacy on key systems and extensions. There are no annoying interruptions, no dial pulsing from other parties.

Three Line Guard modules meet all requirements:

**Line Exclusion Module:** Provides privacy for each telephone so equipped on a line. (One module required per phone.)

**Executive Module:** Used in lieu of line exclusion module when one telephone is to have access to the line at all times and still have privacy.

**Group Exclusion Module:** Provides privacy for a group of telephones by excluding another group on the line.

The line exclusion and executive modules measure only 1"x 3/4"x 3/8". They are installed inside the telephone and there is only one connection to make. No external power, switches, wiring, or other equipment are required. The group exclusion module is installed in the terminal box.

Line Guard modules may be used with any type of telephone. They can be applied to key systems, convenience systems, PABX and PBX, data phones and residential extensions. They have no effect on transmission, pulsing or signalling.

Ordering No.	Description	Shipping Wt., Lbs.	Price Each
<b>S-426120</b>	P-405C Line Exclusion Module	1/4	<b>\$12.50</b>
<b>S-426121</b>	P-406 Executive Module	1/4	<b>12.50</b>
<b>S-426122</b>	P-404 Group Exclusion Module	1/4	<b>35.00</b>