

## SPECIAL FACILITY PANELS

### TELEPHONE PANEL 260A



**Use** — The Western Electric 260A Telephone Panel provides magneto type subset facilities for order wire telephone communication between the operating points in a radio broadcasting system over a pair of wires. (Check suitability for use with owner of wire circuits).

**Description** — This panel permits the use of standard type telephone instruments such as the Western Electric F2B-3 Handset, or an operator's telephone set with breast type transmitter and headset or both if desired. (Instruments not included with panel).

The component parts are assembled on a recessed metal panel. It is designed to mount in a standard relay rack or equipment cabinet. A mat finished in dark aluminum gray is provided for the face of the panel where the various keys and jacks, as well as the control for the hand operated generator are assembled for convenient operation. The rear side of the equipment mounting is covered with an aluminum-finished dust cover which is removable to provide access to the apparatus. The mat and back cover may be obtained with a black finish if desired.

The circuit of the 260A Telephone Panel is designed to operate from an external quiet 12 or 24 volt d-c source or (as an alternative where 12 volts is not available) from a 4.5 volt dry battery, space for which is provided in the panel.

#### Specifications

**General:** Intended for furnishing telephone subset facilities for order wires at the operating points in a radio broadcasting system.

**Accessory Equipment:** An F2B-3 Hand Telephone Set or an operator's telephone set, or both simultaneously, may be used but must be ordered separately.

**Current Supply:** 12 or 24 volt d-c source or local 4.5 volt dry battery. (Dry battery is not furnished and must be ordered separately.)

**Weight:** 25 pounds.

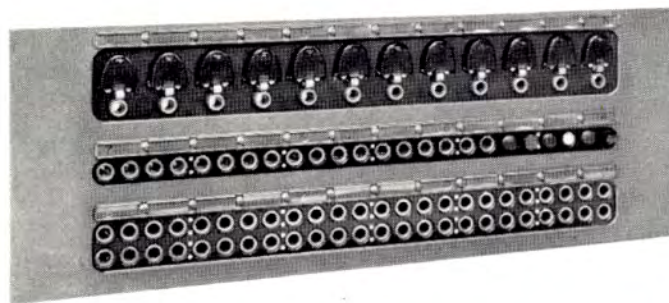
**Dimensions:** 19" wide by 5-7/32" high.

**Finish:** Chassis — Light gray.

Mat — 260A-15 — Dark aluminum gray.

260A-3 — Black.

### 268A ORDER WIRE PANEL



**Use** — This order wire panel is a ring down drop and patching panel for terminating magneto type order wire lines for use when radio broadcast programs originate at points remote from the main studio and where communication is important between the operator at the remote pickup point and the operator in the main control room. This panel is ideally suited for use in main control rooms where a large number of lines are to be terminated. (Check suitability for use with owner of wire line facilities). The use of this panel expedites handling calls and promotes efficient program dispatching. Requires separate subset facilities such as 260A telephone panel.

**Description** — Terminating facilities are provided for twelve incoming order wire lines.

The 268A Order Wire Panel furnishes terminating facilities for twelve income order wire lines including:

1. Twelve plug in restoring combined jack and signal units, one for each order wire line.
2. Jacks for testing and for interchange of order wire lines and program lines in emergencies.
3. Night alarm type call indicator lamp and key-controlled buzzer which announces incoming signals simultaneously with respective line signals.
4. Calling and answering cord.
5. Key for ringing from external 20 cycle ringing voltage supply.



6. Spare jacks for three additional lines.
7. Jacks for talking and ringing circuit of associated telephone panel.

The components are assembled on a recessed panel approximately 19" wide and 7" high that is designed for mounting on standard relay rack or in an equipment cabinet. The face of the panel is covered with a mat which conceals the panel mounting screws. This mat provides a mounting for the designation strips which identify the telephone line signals or drops as well as the three rows of jacks.

Incoming calls are registered by the line drops, the signal lamps and the buzzer simultaneously. A key is provided for disconnecting the buzzer.

## Specifications

**General:** Provides terminating and signalling facilities for twelve telephone order wire circuits between the operating points in radio broadcasting systems. Spare jacks and mounting positions for terminating three additional lines if required.

**Power Supply:** 12 volts grounded d-c supply for the signal lamps and the buzzer and 20 cycle ringing voltage are required. 24 volt d-c may be used instead of 12 volts if lamps suitable for this voltage are employed.

**Dimensions:** 19" wide by 6-31/32" high.

**Weight:** 25 lbs.

**Finish:** Chassis — Light gray.

Mat — 268A-15 — Dark Aluminum Gray.  
268A-3 — Black.

## OUTPUT SWITCHING PANEL 270B 3 STUDIO-3 LINE CAPACITY



**Use** — The 270B Output Switching Panel provides lever key switching facilities for interconnecting three studio amplifier channels to three outgoing line circuits in any combination except that the outgoing lines cannot be connected to more than one studio at a time. The outgoing line circuits may be used for local audition purposes, or for direct connection to an adjacent radio transmitter. They may also be used in conjunction with repeating coils and telephone lines to furnish programs to networks or to radio transmitters situated remotely from the studio.

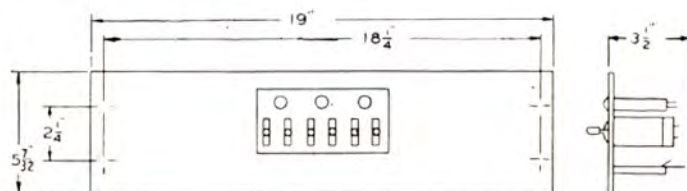
**Description** — The 270B panel is designed to operate between 600 ohm impedances and will accommodate input power levels as high as 240 milliwatts (+24 dbm). Resistance networks maintain constant impedance relations in the connecting circuits irrespective of the switching combi-

nations employed. The insertion loss introduced by these coupling networks is 10 db.

The components are assembled on a metal panel, equipped with a face mat, which serves as a mounting for the designation plate associated with the control keys and indicating lamps.

There are six lever type keys and three signal lamps. Three keys are employed to assign the various studio channels to the outgoing circuits. Each key is connected to a particular studio amplifier system or channel and is locking in both up and down positions. The other three keys and the three signal lamps are for control of the signals to the studio booth operator. These keys are locking in both "On" and "Off" positions.

Four terminal strips are provided for external connections.



## Specifications

**Input:** Input impedance is 600 ohms for each of three available circuits. Will accommodate input levels up to +24 dbm.

**Output:** Three output circuits of 600 ohms each.

**Power Supply:** 12 volts battery supply is required for the operation of the signal lamp system; 24 volts d-c supply may be used if lamps suitable for this voltage are employed.

**Dimensions:** 19" wide by 5-7/32" high.

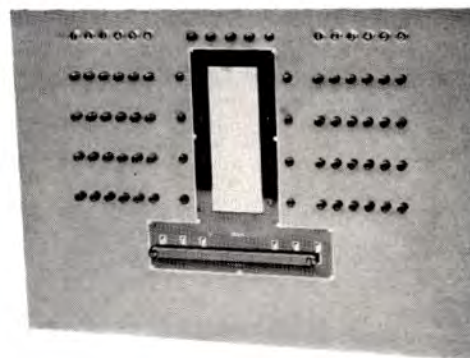
**Mounting:** Standard relay rack or equipment cabinet.

**Weight:** 7 1/2 pounds.

**Finish:** Chassis — Light gray.

Mat — 270B-15 — Dark aluminum gray.  
270B-3 — Black.

## 271B OUTPUT SWITCHING PANEL 6 STUDIO-4 LINE OR 4 STUDIO-6 LINE CAPACITY







The 271B output switching panel provides high grade mechanically interlocked selector key switching facilities for inter-connecting six studio amplifier channels to four outgoing line circuits in any combination except that the outgoing lines cannot be connected to more than one studio at a time. Duplicate banks of selector keys allow presetting of studio amplifier channels for the next scheduled program. A master key switches between the banks of selector keys and a monitor switch transfers a monitoring amplifier or a volume indicator to any one of the outgoing circuits. The 271B is designed to operate between input and output circuits of 600 ohms impedance.

### Specifications

**Source Impedance:** 600 ohms.

**Load Impedance:** 600 ohms.

**Insertion Loss:** (Studio to Line) 23 db from input to output.

**Power Supply:** 12 volts d-c required for the amplifier channel designation lamps; 24 volts d-c may be used if suitable lamps are employed.

**Dimensions:** 19" wide, 13-31/32" high and 3 3/8" deep.

**Weight:** 18 pounds.

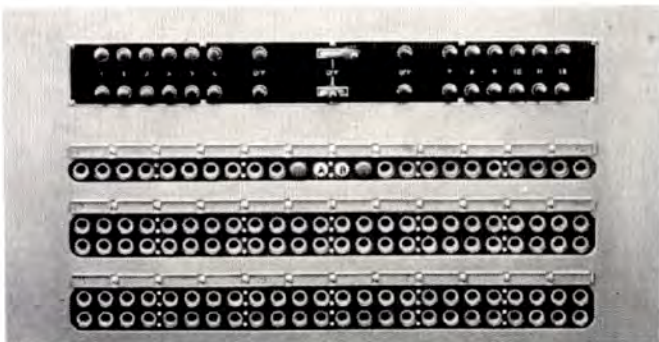
**Mounting:** Designed to mount in a standard relay rack or equipment cabinet.

**Finish:** Chassis — Light gray.

Mat — 271B-15 — Dark aluminum gray.

271B-3 — Black.

## 272A PROGRAM LINE PANEL



**Use** — The 272A Program Line Panel provides facilities for terminating and switching incoming programs from outside sources. It may be used at the main studio location or other suitably equipped switching points of a radio broadcasting system.

It is intended for operation from incoming program circuits of 150 or 600 ohms nominal impedance. The two outgoing circuits contain transducer networks which effect for each circuit an output impedance of 600 ohms to the studio equipment. The transmission loss from any selected incoming program circuit to either of the two available output

circuits is approximately 11 db exclusive of the loss introduced by the associated program circuit equalizer if one is employed. A 600 ohm artificial line with an attenuation or loss of 10 db is provided in the panel for further attenuating the program energy of either output circuit, should this be required. The terminals of this pad are connected to jacks which appear at the front of the panel.

**Description** — This panel accommodates twelve incoming program circuits which are connected to jacks for testing, cross connection or interchange of program circuits and order wire lines in emergencies. High impedance monitoring (bridging) connections are provided for each program circuit for headset monitoring, testing, or other purposes as may be required.

Any one or two of the twelve incoming program circuits may be selected and assigned to either of two output key circuits.

The program circuit selector keys are mechanically interlocked which ordinarily prevents the assignment of more than one incoming program circuit to a single output key circuit.

The selector keys in duplicate also make possible pre-setting for one outside program while another is in progress.

Indicating lamps associated with each local circuit inform the operator when selected program circuits are in service through the local amplifier channels.

Circuit jacks at the necessary points in the electrical paths throughout the panel provide access to any part of the circuit for testing purposes. However, normal operation is accomplished without the use of patching cords and plugs, the circuits being continuous through the jacks.

The component parts of this unit are assembled on a mat covered metal panel which occupies a space approximately 19 1/4" wide and 10 1/2" high in a standard relay rack or an equipment cabinet.

### Specifications

**General:** Provides facilities for terminating and switching twelve incoming program lines.

**Input:** Operates from 150 or 600 ohms nominal impedance.

**Output:** 600 ohms for each of two output circuits.

**Weight:** 12 lbs.

**Dimensions:** 19-5/32" long by 10-15/32" high.

**Finish:** Chassis — Light gray.

Mat — 272A-15 — Dark aluminum gray.

272A-3 — Black.

## 279A EQUALIZER PANEL





Covers the same equalization range as the 23A Equalizer and is designed for use on lines which do not warrant the permanent association of a fixed equalizer. This adjustable equalizer may be patched to any program line and the equalization and program level quickly adjusted to meet the characteristics of the line.

It employs three dial-type adjustable series resistances, connected in place of the resistance elements of the 23A, to facilitate rapid equalization of the line. It also incorporates a separate 600:600 ohm dial type attenuator having maximum attenuation of 50 db adjustable in 5 db steps, useful in controlling incoming line level, so that the output is approximately correct for mixing with the outputs of pre-mixing amplifiers associated with studio microphones.

### Specifications

*Frequency Range:* 25 to 8000 cycles.

Range of adjustment same as 23A equalizer. See description below.

*Dimensions:* 19" wide and 3-15/32" high.

*Weight:* 8½ pounds.

*Finish:* Mat — 279A-15 — Dark aluminum gray.  
279A-3 — Black.

*Mounting:* Standard 19" relay rack or equipment cabinet.

## 23A EQUALIZER



**Use** — Used to correct the non-uniformity of transmission in the range from 25 to 8,000 cycles of non-loaded telephone cable employed for the transmission of program material. It is intended for use on program lines which are employed frequently enough to justify the permanent association of an equalizer.

**Description** — The 23A is of the shunt type consisting of an inductance and a capacity in parallel and a tapped series resistance the value of which is determined at the time of installation from the transmission characteristic of the circuit. Seven resistance units provide a total of 322.5 ohms.

By use of the 23A Equalizer, non-loaded cable circuits consisting entirely of one gauge can be equalized up to the following approximate lengths with a maximum deviation of 1 db: 16 gauge — 21.5 miles; 19 gauge — 10 miles; 22 gauge — 6.5 miles. The following lengths can be equal-

ized with a maximum deviation of 2 db: 16 gauge — 25 miles; 19 gauge — 11.5 miles; 22 gauge — 7 miles.

### Specifications

*Frequency Range:* 25 to 8000 cycles.

Range of adjustment see "Description."

*Dimensions:* 1-11/16" wide, 3-9/32" high and 4-3/16" deep.

*Weight:* 3 pounds.

*Mounting:* Mounts on equipment panel such as Western Electric 993B or 993C Mounting Plate.

*Finish:* Gray enamel.

## HEADSETS AND HAND TELEPHONE SETS

### D-97690 HEADSET



This ruggedly built dynamic type headset consists of two 711A Receivers and a D-90957 Head Band. A D-90944 cord 6 feet long equipped with a 47 Type Plug is required for use with this headset and must be ordered separately.

### Specifications

*Impedance:* 50 ohms.

*Frequency Response:* Uniform to 7500 cycles.

### 1002F AND 1002H HEADSETS

Useful and durable monitoring headsets familiar to most broadcast operators. They are recommended for use with the 22D Portable Speech Input Equipment and in control room monitoring. Consist of a cloth-covered wire headband carrying two non-adjustable receivers (509W) connected in series by means of a Y cord (768). The 1002F has a two-conductor (47B) plug at the opposite end of the cord while the 1002H terminates in pin tips.

When either of these headsets is required fully equipped with the 241 Type Twin Plug, order the R2ET Cord and either the 241A (black shell) or 241B (red shell) plug and replace the corresponding items.





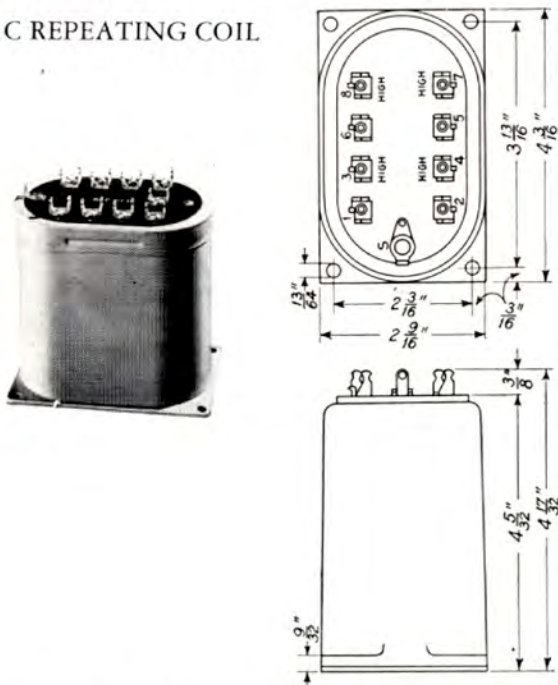


## Specifications

**Frequency Range:** 30-15,000 cycles.

**Insertion Loss:** Less than 0.5 db.

### 111C REPEATING COIL



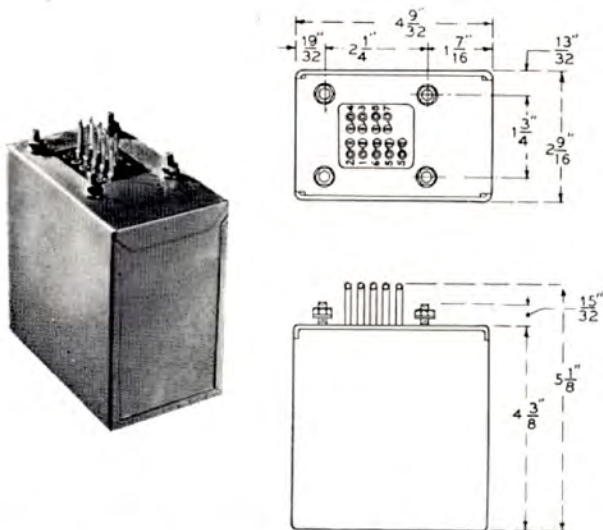
**Dimensions:** 2-9/16" x 4-3/16" x 4-17/32".

**Weight:** 4 1/2 pounds.

**Mounting:** Flat base for board or panel mounting. Mounting holes to clear #8 machine screws.

**Finish:** Gray enamel.

### 119C REPEATING COIL



**Dimensions:** 2-9/16" x 4-9/32" x 5-1/8".

**Weight:** 4 pounds.

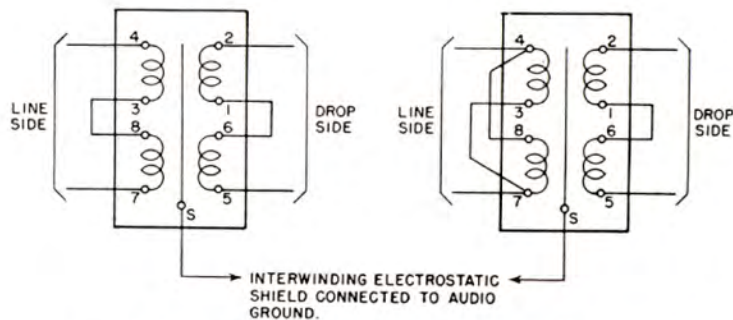
**Mounting:** Single side stud mounting using 993A or 993C Mounting Plate.

**Finish:** Gray enamel.

### 111C AND 119C REPEATING COILS

IMPEDANCE RATIO  
111C 600Ω : 600Ω  
119C 520Ω : 600Ω

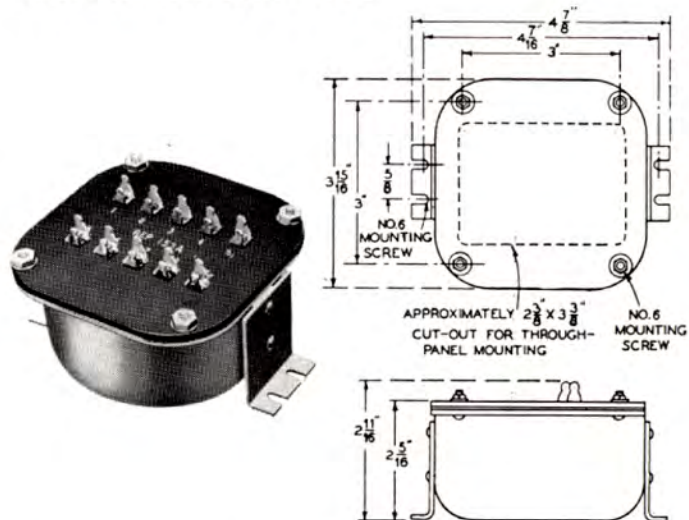
IMPEDANCE RATIO  
111C 150Ω : 600Ω  
119C 130Ω : 600Ω



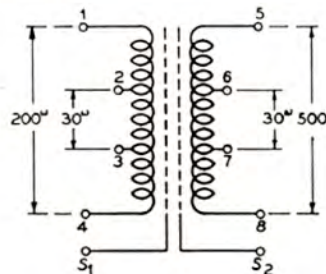
TYPICAL USE  
BETWEEN 600Ω CIRCUITS

TYPICAL USE  
FOR CABLE CIRCUITS & SHORT LINES

### 153A REPEATING COIL



A toroidal coil with permalloy core in a flat type mounting, potted in a heavy iron case. Designed for general use in microphone or line level circuits to match impedances. A high degree of shielding against unwanted longitudinal transmission is provided by two electrostatic shields between windings — use separately to segregate grounds or strap to form a single shield.



## Specifications

**Frequency Range:** 40-15,000 cycles.

**Insertion Loss:** Less than 0.5 db.



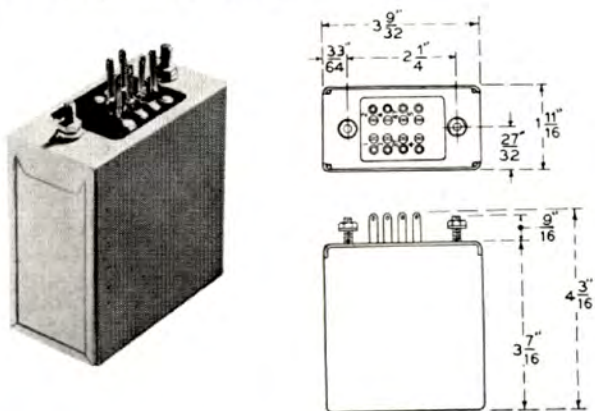
**Dimensions:** 4-7/8" x 3-15/16" x 2-11/16" including terminals.

**Weight:** 2 pounds, 10 ounces.

**Mounting:** Flat base for board or panel.

**Finish:** Gray enamel.

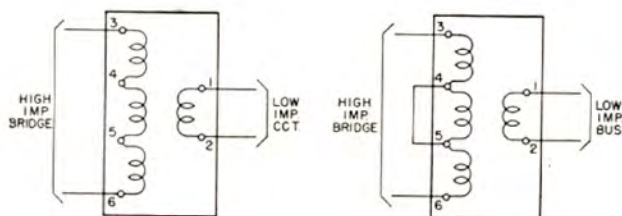
**154C REPEATING COIL**



A high quality repeating coil for bridging service. It has a shell type chrome permalloy core and is potted in a rectangular metal case arranged for single side stud mounting.

IMPEDANCE RATIO  
55400 : 600  
LOSS THROUGH COIL 24db

IMPEDANCE RATIO  
30400 : 600  
LOSS THROUGH COIL 18db



LOSS IN CIRCUIT BRIDGED NEGLIGIBLE IF COIL IMPEDANCE IS AT LEAST 5 TIMES THAT OF CIRCUIT BRIDGED.

**Specifications**

**Frequency Range:** 30-15,000 cycles.

**Insertion Loss:** See sketch above.

**Dimensions:** 3-9/32" x 1-11/16" x 3-7/16" (4 1/16" overall).

**Weight:** 2 1/4 lbs.

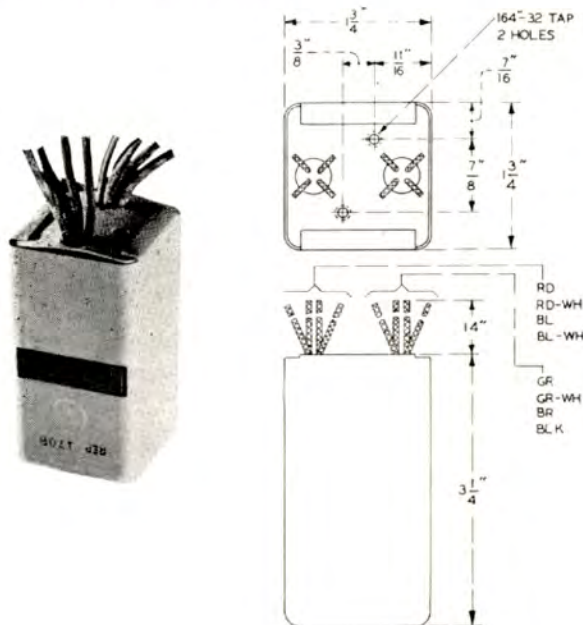
**Mounting:** Single side stud mounting using 993B or 993C Mounting Plate.

**Finish:** Gray enamel.

**170B REPEATING COIL**

A shell type line repeating coil with a permalloy core enclosed in a metal case of unusually small size. Designed to provide dependable impedance matching and line isolation

at line circuit transfer points with complete assurance that the highest program quality is being maintained. It has an impedance ratio of 600:600 ohms.



**Specifications**

**Frequency Range:** 30-15,000 cycles.

**Insertion Loss:** Approximately 1 db.

**Dimensions:** 1-3/4" x 1-3/4" x 3-1/4".

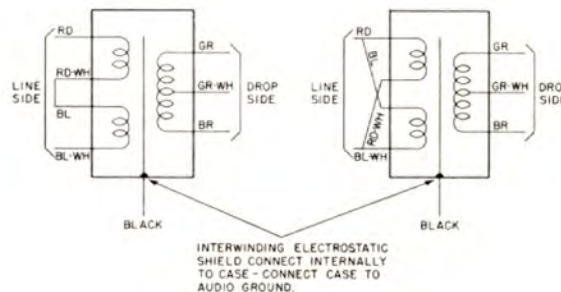
**Weight:** 1 1/4 pounds.

**Mounting:** Flat base for flat plate or chassis mounting. Two threaded mounting holes take 8-32 screws.

**Finish:** Gray enamel.

IMPEDANCE RATIO  
600Ω : 600Ω - GR TO BR  
600Ω : 150Ω - GR TO GR-WH OR BR TO GR-WH

IMPEDANCE RATIO  
150Ω : 600Ω - GR TO BR  
150Ω : 150Ω - GR TO GR-WH OR BR TO GR-WH



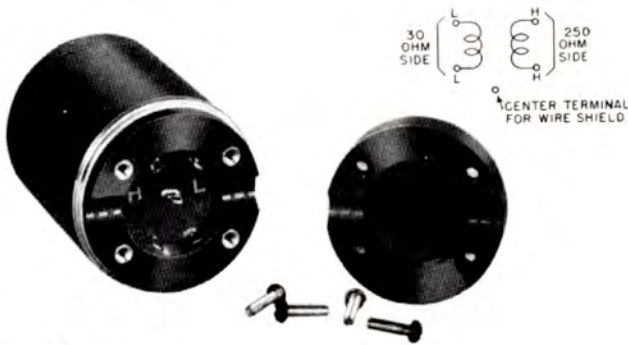
**172A REPEATING COIL**

An exceptionally high quality impedance matching device for use in low level circuits particularly between a microphone and amplifier. It employs screw type terminals and is adaptable for connection in the microphone cordage or it may be mounted on the associated amplifier. A plastic cover, illustrated below, protects and insulates the coil. The cord



# Western Electric

slots grip the cord and relieve the strain on the terminals and terminal plate. The 172A will transmit equally well in either direction.



### Specifications

**Frequency Range:** 30-15,000 cycles.

**Insertion Loss:** Approximately 1 db.

**Dimensions:** 1-3/4" diameter x 2-25/32" long.

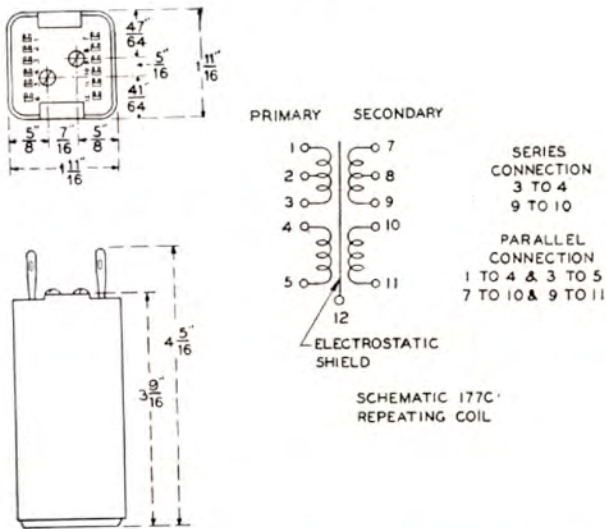
**Weight:** 12 ounces.

**Mounting:** Use connected in microphone cord or mount on flat surface by means of loop bracket.

**Case:** Magnetic shielding permalloy metal.

**Finish:** Black.

## 177C REPEATING COIL



A shell type line repeating coil with a permalloy core enclosed in a metal case of small size. Designed to provide dependable impedance matching and line isolation at line circuit transfer points, and for changing from balanced to unbalanced circuits. The coil has a one-to-one ratio.

It has an electrostatic shield between windings and an electromagnetic shield inside the case. Additional electromagnetic shielding, if required in instances of severe exposure, may be obtained by adding a 42A shield externally. Winding data on the 177C Repeating Coil is shown above:

All windings are identical except that windings 1—3 and 7—8 have a mid-tap (terminal 2 and 8 respectively). These may be used to provide a mid-ground point for the parallel connection; for the series connection terminals 3 and 9 may, of course, be used. The following connections should be used for impedances between 25 ohms and 600 ohms:

WINDINGS		OPERATING
Primary	Secondary	Impedance Ratios
Series	Series	600 ohms to 600 ohms or 150 ohms to 150 ohms
Parallel	Parallel	25 ohms to 25 ohms
Series	Parallel	150 ohms to 25 ohms

### Specifications

**Frequency Range:** 50-15,000 cycles.

**Insertion Loss:** Less than 1 db when connected between two like impedances. Slightly more when operating from a low impedance into an open circuit.

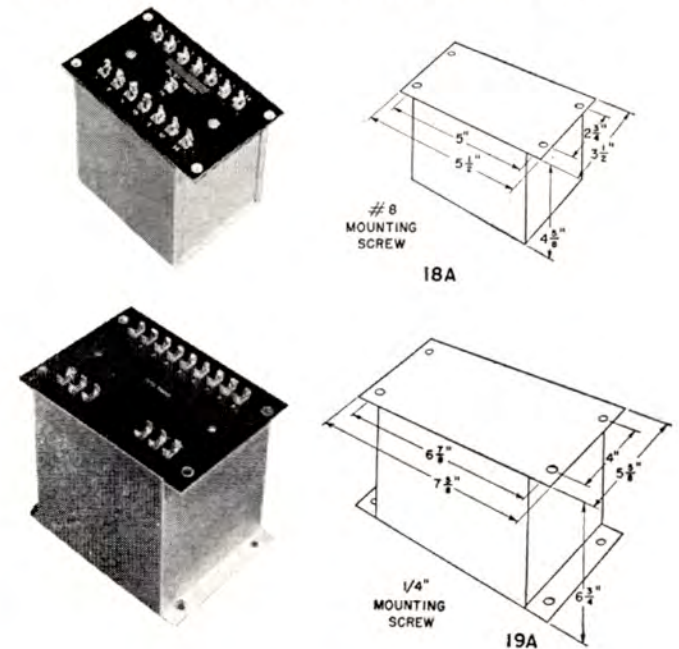
**Dimensions:** 1-11/16" x 1-11/16" x 3-9/16".

**Mounting:** Flat base for flat plate or chassis mounting. Two threaded mounting holes take 8-32 screws.

**Finish:** Gray enamel.

## AUTO TRANSFORMERS

### 18A AND 19A AUTO TRANSFORMERS



Designed to provide impedance matching between amplifiers and loudspeakers over a wide range of applications. These two transformers have the same impedance ratios and cover the same frequency range, but differ in size and power handling capacity.





**Specifications**

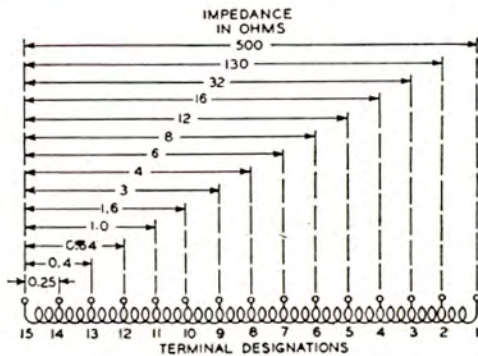
**Frequency Range:** 15 to 15,000 cycles.

**Average Loss:** 0.35 db for the 18A; 0.1 db for the 19A.

**Power Capacity:** 18A is 50 watts continuous; 19A is 200 watts continuous, 500 watts on speech or music from 100 to 15,000 cycles. (These power ratings hold only to tap 10. For lower taps reduce ratings 2 db.)

**Insulation:** 18A — 2,000 volts a-c; 19A — 3,000 volts a-c.

**Impedance Ratio:** See diagram.



**Dimensions:** 18A — 5-1/2" long, 3-1/2" deep and 4-5/8" high (not including terminals); 19A — 7-5/8" long, 5-5/8" deep and 6-3/4" high (not including terminals).

**Weight:** 18A — 9 pounds 3 ounces; 19A — 27 pounds.

**BLANK PANELS AND MOUNTING PLATES**

**BLANK PANELS**



For use on standard 19" equipment racks or bay cabinets. Panels are matte finished furniture steel in either dark aluminum gray or black japan. Length is the standard 19" or 19-5/32", and nominal widths are standard multiples of 1-3/4". The following nominal widths are available: 3-1/2", 5-1/4", 7", 8-3/4", 10-1/2", 12-1/4", 14", 15-3/4", 17-1/2". The 19" panels fasten with screws through them into the rack or bay cabinet. The 19-5/32" panels fasten to rack or cabinet with screw-held clips on the rear surface.

**19" PANELS**

Width	Dark Aluminum Gray	Black
3-15/32"	BR-74824 — 4	BR-74824 — 5
5-7/32"	— 9	— 10
6-31/32"	— 14	— 15
8-23/32"	— 19	— 20
10-15/32"	— 24	— 25
12-7/32"	— 29	— 30
13-31/32"	— 34	— 35
15-23/32"	— 39	— 40
17-15/32"	— 44	— 45

Panels are furnished with the necessary Phillips recessed button head screws and spacers. The screws are brushed chrome finish. Spare screws and spacers are supplied with each panel, a minimum of one screw and washer where four or less are required, and 25% spares where the total exceeds four.

**19-5/32" PANELS**

Width	Dark Aluminum Gray	Black
1-23/32"	ES-611916 — 21	ES-611916 — 31
3-15/32"	— 22	— 32
5-7/32"	— 23	— 33
6-31/32"	— 24	— 34
8-23/32"	— 25	— 35
10-15/32"	— 26	— 36
12-7/32"	— 27	— 37
13-31/32"	— 28	— 38
15-23/32"	— 29	— 39
17-15/32"	— 30	— 40

Furnished with mounting clips and screws to secure panel from rear. No screws appear in front.

**296 TYPE PANELS**

Blank mats, for chassis type apparatus having bent up flanges. Designed primarily for use with 177 and 190 type mounting plates. Made of finished furniture steel, they may be drilled or punched for any desired arrangement of controls, meters, etc.

The 296A Panel is designed so as to be attached to a mounting plate from the rear, thus eliminating screw heads on the front of the panel.

The 296B Panel is attached to a mounting plate from the front with four Phillips recessed binding head screws.

**Specifications**

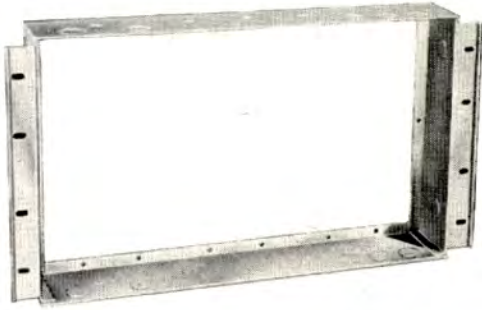
**Dimensions:** 19-5/32" wide, 3/32" thick, and 10-15/32" high, (occupies 10-1/2" of vertical space in standard rack or cabinet).

**Weight:** 5-1/2 pounds

<b>Finish:</b> 296A-15	Dark Aluminum Gray
296A-3	Black
296B-15	Dark Aluminum Gray
296B-3	Black



## 177A AND 177B MOUNTING PLATES



Chassis for supporting plate-mounted amplifiers and similar apparatus. Designed primarily for mounting 120, 121, 132 and 133 type amplifiers and 18A rectifiers. It is made of 1/16" furniture steel with knockouts provided for all necessary accessory leads. The 177A Mounting Plate uses the 296A Panel as a mat and is fastened to the panel from the rear, eliminating screw heads on the front of the panel. The 177B Mounting Plate, using the 296B panel as a mat, is first secured to the rack or cabinet and the panel is fastened over it from the front with four Phillips recessed binding head screws. The 296 Type panel must be ordered separately.

### Specifications

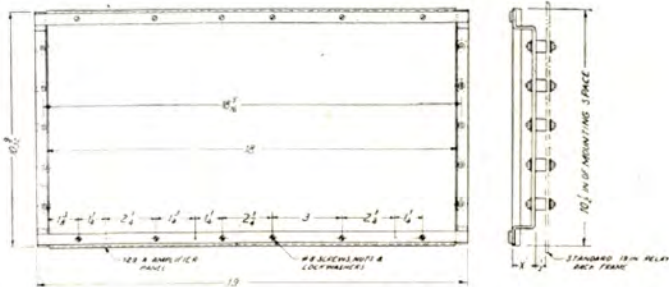
**Width:** 18-15/16", for 177A or B and 18-5/32" for 296A or B.

**Height:** 10-1/4" for 177A or B (occupies 10-1/2" of mounting space), and 10-15/32" for 296A or B.

**Weight:** 4 pounds.

**Finish:** Gray enamel.

## 190A & B MOUNTING PLATES



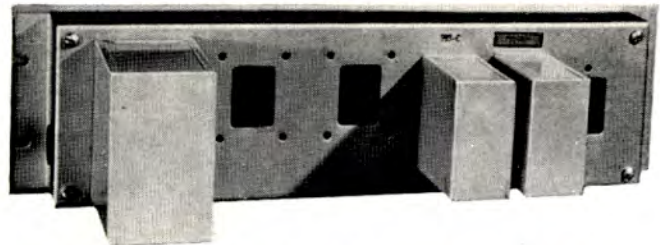
These mounting plates are designed for mounting 120, 121, 129, 130, 131, 132 and 133 type amplifiers and 18-A rectifiers in equipment cabinets or on standard 19" relay rack frames. These mountings are identical except for dimension "X" which is 1 inch and 2-1/4 inches for the 190-A and 190-B mounting plates respectively. The 190-A mounting plate is intended primarily for use in the 21A cabinet or other cabinets where no front panel is required. The 190-B mounting plate is intended for use in cabinets where the mounting frame is at the front. A 296 type panel which is

required forms the front of the cabinet. The 296 type panels must be ordered separately.

### Possible Mounting Combinations Using One 190A or 190B Mounting Plate.

COMBINATION	TYPE OF AMPLIFIER OR RECTIFIER							
	120B	121A	129A	130A	131A	132A	133A	18A
1	3							
2						3		
3							3	
4	2					1		
5	1					1	1	
6	1					2		
7						2	1	
8	2						1	
9						1	2	
10	1						2	
11	1	1						
12		1				1		
13		1					1	
14			1					
15	1			1				
16				1		1		
17				1			1	
18					1		1	
19					2			
20	1				1			
21					1	1		
22	1							1
23						1	1	1
24							1	1

## 993A, 993B AND 993C MOUNTING PLATES



993C Mounting Plate with 23A Equalizer, 154C and 119C Repeating Coils.

Recessed type relay rack mounting plates equipped with face mats. The 993A has a mounting capacity of six 119 Type Repeating Coils. The 993B has a mounting capacity of eight 23A Equalizers or 154C Repeating Coils. The 993C has a mounting capacity of three 119 Type Repeating Coils and either three 23A Equalizers or three 154 Type Repeating Coils.

### Specifications

**Dimensions:** 19" wide, 5-7/32" high.

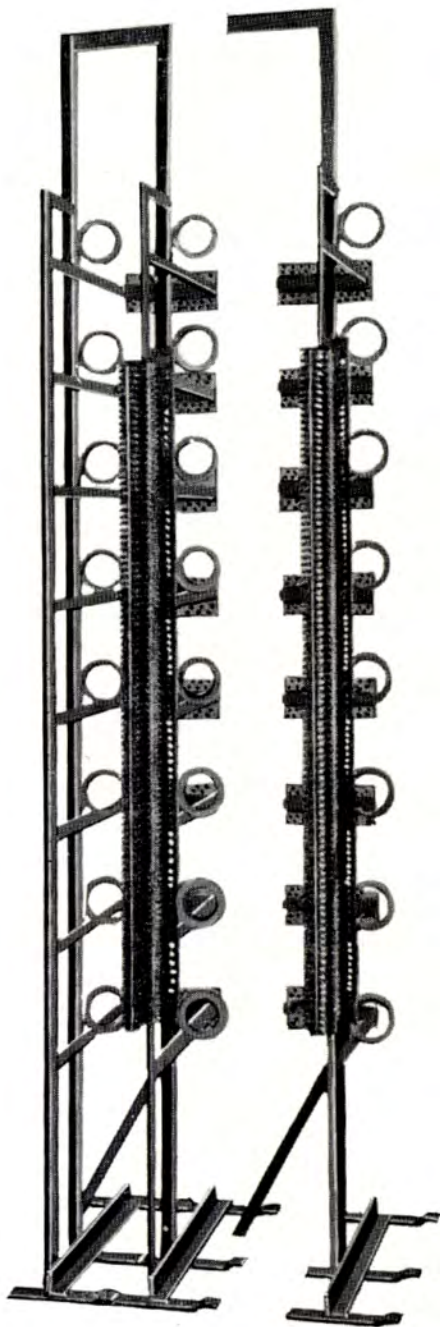
**Finish:** 993A-15; 993B-15; 993C-15 — Dark aluminum gray.  
993A-3; 993B-3, 993C-3 — Black.





## DISTRIBUTING FRAMES

### 1425 TYPE DISTRIBUTING FRAMES



(Left) This shows two units of No. 1425C distributing frame lined up and bolted together. As many 100 line units as desired may be installed. Two units are necessary at the beginning of the frame; one unit for each additional 100 lines.

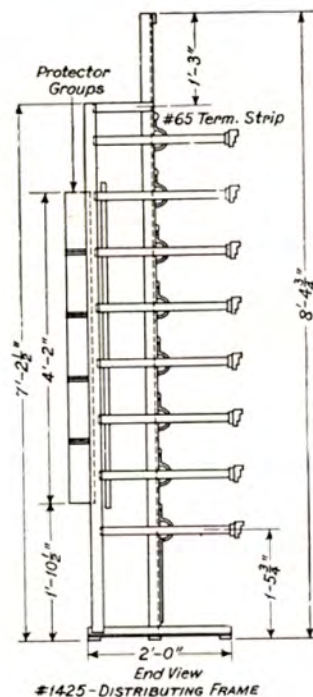
(Right) This is one 100 line unit of No. 1425C distributing frame. The Code No. 1425C covers the steel framework, distributing rings and fanning strips.

This is a unit type frame suitable for main frame and distribution points. In multiple studio installations considerable convenience can be gained by terminating all studio

wiring on a central structure either in or closely associated with the main control room. These frames permit permanent cabling of established circuits and jumper wire connection for emergency or temporary circuits.

They are rigidly constructed of steel angles and bar iron, and are made up in units of one vertical member each. Each frame has a capacity of 100 lines. Several frames can be bolted together to increase the number of circuits that can be handled. By lining up a number of these frames any number of lines can be terminated. All frames are equipped with rubber covered distributing rings which are placed conveniently to facilitate the running of jumper wires.

An assembly of these frames should begin with at least two units. When ordering specify the number of units required. Further information on the application of the frames into a specific installation may be obtained from our distributors.



The Terminal strips shown on page 78 may be ordered separately for use with this frame; No. 65 Terminal strip is recommended.

## FANNING STRIPS AND TERMINAL STRIPS

### 15 TYPE FANNING STRIPS



Made of well seasoned maple, the dimensions are 1-5/16" x 1/2" in either 16 pair capacity with a length of 10-7/16" (15A) or 26 pair capacity with a length of 16-11/16" (15B). They are designed to mount on edge and fasten in



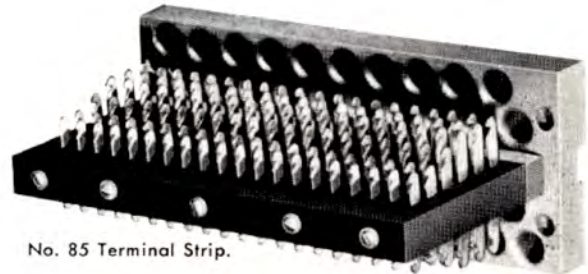
place by means of flat head screws. The outside edge is finished in black, so that white characters may be painted upon the surface for identification of the various wires. The holes through which the wires are to pass have their edges carefully chamfered to prevent injury to the insulation.

Ideally suited for use with the 31 Type Connecting Blocks, where both are mounted on a suitable base or in a wall box, for studio or interstudio wiring arrangements; keeps wiring neat and orderly and permits designation for ready identification.

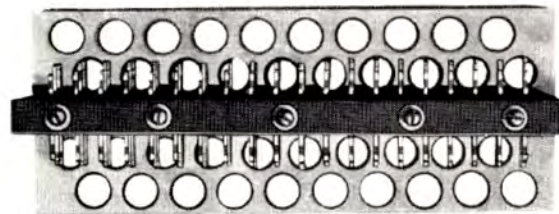
## TERMINAL STRIPS

These terminal strips are ideal for mounting on the 1425 distributing frame, at the base of racks and inside equipment cabinets. They provide convenient terminations for many circuits. They are made of a solid maple base upon which are assembled hard rubber insulating strips which hold the terminal punchings in place. The base is drilled to act as a fanning strip for wires and the holes are cham-

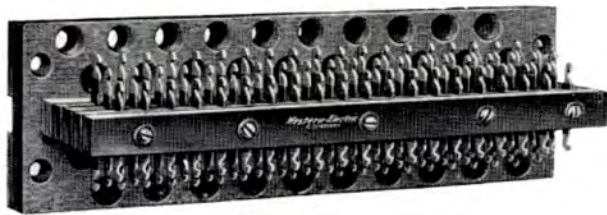
fered to prevent injury to the insulation. The type 65 is a three way terminal which makes it suitable for junction points in multiple studio wiring.



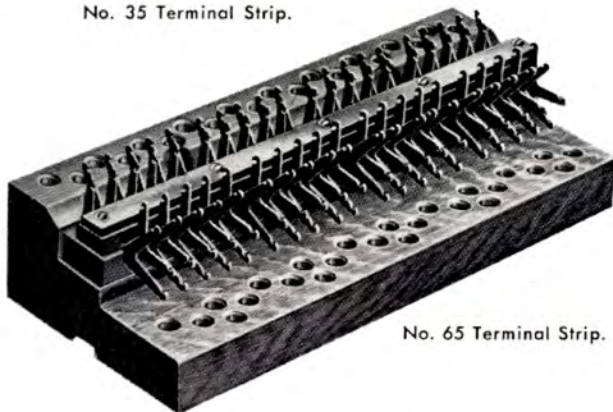
No. 85 Terminal Strip.



No. 100A Terminal Strip.

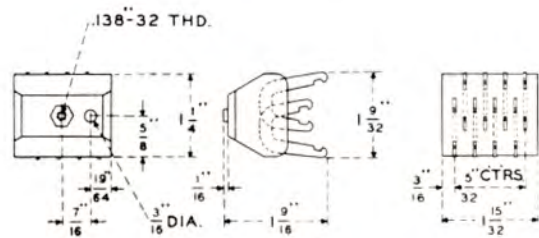


No. 35 Terminal Strip.



No. 65 Terminal Strip.

## 700A TERMINAL STRIP



A rugged, moulded, eight terminal strip for many applications in audio systems. U-shaped punchings are arranged so that terminals are in two rows of 4 each.

## TERMINAL STRIP MOUNTING INFORMATION

Code No.	Number of Terminals per Row	Number of Rows of Terminals	Length of Strips in (Inches)	Width (Inches)	Height Overall (Inches)
35	20	3	7-31/32	2-17/32	2-31/64
36	20	4	7-31/32	2-17/32	2-55/64
*65	40	1	7-31/32	3-3/8	2-3/32
85	20	6	6-15/32	2-19/32	4-1/64
99	50	6	14-7/16	2-19/32	3-7/16
100A	20	3	6-1/16	2-15/16	2-11/16
100B	20	4	6-1/16	2-15/16	3-1/32
100C	20	5	6-1/16	2-15/16	3-13/32
100D	20	6	6-1/16	2-15/16	3-3/4
185A	30	6	11	2-15/16	4

\* Three way.



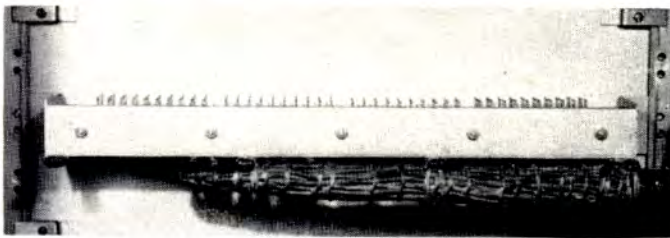


## TERMINAL PANEL AND CONNECTING BLOCKS

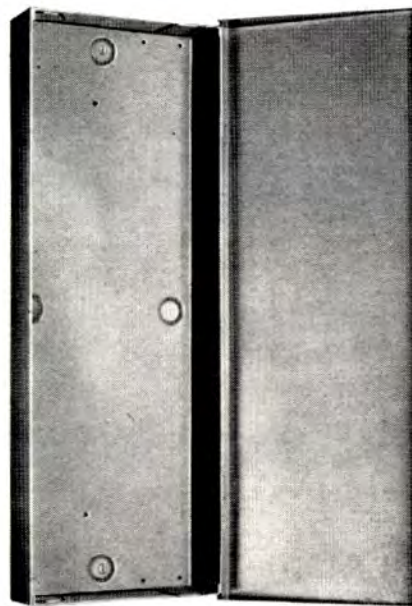
## CABLE TERMINAL BOX

### TYPE GA26 — CABLE TERMINAL BOX

#### 288A TERMINAL PANEL



Consists of a mounting plate equipped with 16 P-250833 Terminal Units, of 10 terminals each, a total of 160 terminals. Tie bars are provided for external cables. Approximate overall dimensions are 19" long, 1-3/4" high and 4-1/8" deep. The terminal panel, however, will require a minimum mounting space of 5-7/32" for one and 8-23/32" for two in standard racks or cabinets in order to provide space for cable forms and for making connections to the terminal units. The code 288A Terminal Panel does not include the necessary blank face panel which must be specified as a separate item on the order.



#### 11 TYPE AND 31 TYPE CONNECTING BLOCKS



Intended for use in housing terminal strips or adapters for connecting blocks. They provide a flexible wiring arrangement by use of fanning strips and 8A distributing rings.

#### Overall Dimensions

*Height:* 19-9/16 inches.

*Width:* 7-5/16 inches.

*Depth:* 2-1/2 inches.

Can be used with all types of terminal strips. When used with 11 type and 31 type connecting blocks a 102D adapter is required.

These connecting blocks provide suitable terminals for equipment wiring. They are available in a number of sizes and arrangements and can be mounted on 102D adapters in GA26 cable terminals.

#### CONNECTING BLOCK MOUNTING INFORMATION

Code No.	No. of Connectors	Descriptions	Size of Base (Inches)			Material Base
			Length	Width	Thickness	
11A	2	Two screw terminals on each connector. Opposite terminals are electrically connected.	1-5/32	1-5/32	9/16	Composition
(a) 11B	2					
(b) 11C	2					
31A	12	Each connector has one lock nut binding post and one soldering terminal, brought out on the side. Intended for use with 15 Type fanning strips.	4-3/16	1-1/2	1/2	Composition
31B	22		7-5/16	1-1/2	1/2	Composition
31C	32		10-7/16	1-1/2	1/2	Composition
31D	52		16-11/16	1-1/2	1/2	Composition

(a) The No. 11B consists of a No. 11A equipped with a black finished metal cover.

(b) The No. 11C is the same as No. 11B except that the under-surface of the top of the cover is provided with an insulating strip to protect the terminals from short circuits.



## 102D ADAPTER

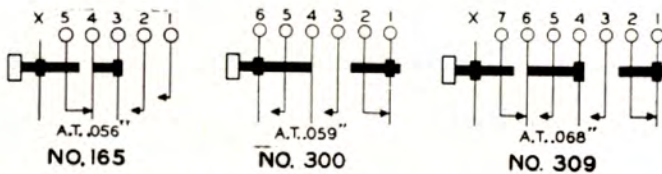
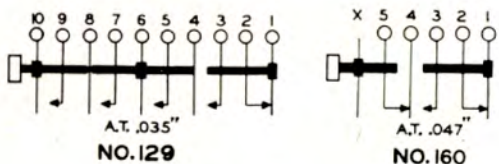
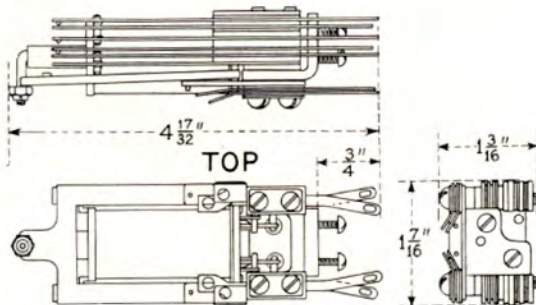


The 102D Adapter is intended for mounting No. 31 type connecting blocks in the GA26 type cable terminal.

Code No.	Mounts in Cable Terminal Box	Overall Dimensions (Inches)		
		Length	Width	Depth
102D	GA26	19-1/16	2-23/32	1-7/8

## RELAYS AND MOUNTING PLATES

### U TYPE

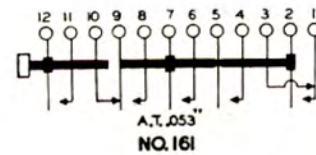
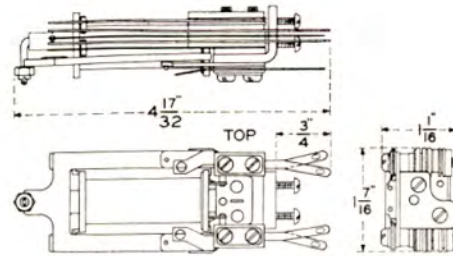


The "U" and "Y" type relays are flat type, round core, general purpose twin contact relays capable of operating large spring combinations with low current consumption.

The use of the rare-metal alloy twin contact arrangement on each contact spring provides paralleled paths for current. This coupled with a slight wiping action assures positive connection on every operation.

These relays can be used for program bus switching, loud-speaker cut-off, microphone switching, and for many other purposes where an efficient dependable relay is required.

### Y TYPE



The "Y" type is essentially the same as the "U" type but is designed to have a slightly slower release time.

They will mount on 1-3/4" vertical centers; horizontal centers are shown in the accompanying table. They can be equipped with either individual or common dust covers. A variety of spring and contact combinations are available. Representative types only are listed below.

Code No.*	Winding	Rated Resistance Ohms	Horizontal Mounting Operate Ampere	Relay Cover	Spring Combinations	
					Top	Bottom
U 430	Single	700	0.028	1-1/2"	U4	309 300
U 590	Single	700	.0245	1-1/2"	U4	165 160
U1183	Pri.	500	.026	1-3/4"	U5	129 129
	Sec.	500	.026			
Y 130	Pri.	165	.0645	1-7/8"	U5	161 161
	Sec.	225	.080			

\* Note: Maximum safe coil dissipation for each type is 4 watts.

### RELAY MOUNTING PLATES

These plates are of steel arranged for mounting relays on relay racks. Dust covers are available to protect the relays from dirt and damage. The 737 type comes equipped with a common cover for all the relays on one plate. The 600A is designed to use either no cover or an individual cover for each relay. The proper cover must be ordered to fit each relay.

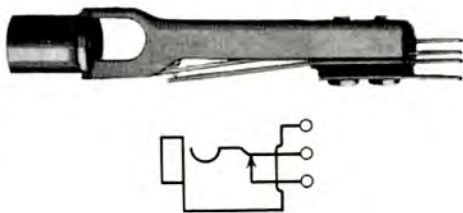
Code No.	Relays per Plate	Mounting Centers	Length
737J	20	3/4"	19"
737N	10	1-1/2"	19"
600A	10	1-3/4"	19"





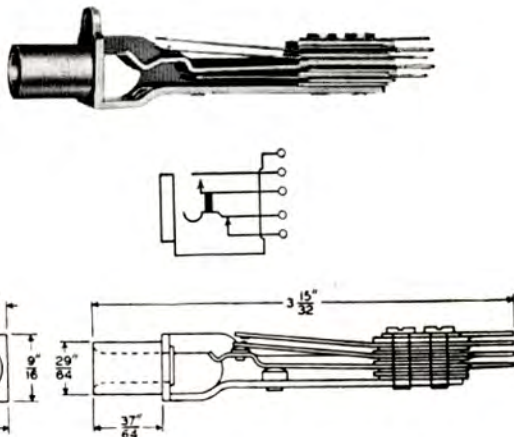
## JACKS AND MOUNTINGS

### JACKS — 218A AND 218J



Singly mounted, electrically welded frame type jacks with contacts of rare metal alloy. Terminals are arranged to accommodate two No. 19 or smaller B and S gauge wires. The 218J has a nickel silver sleeve while the 218A has a plain brass sleeve. They are used with 47 and 241 Type Plugs, and mount in 221 and 222 Type Jack Mountings. With this type of mounting the springs are in the vertical plane. These jacks can be mounted on 5/8" horizontal centers and 7/8" vertical centers.

### 225CE JACK

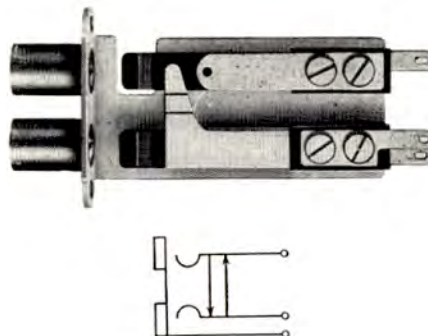


A singly mounted, electrically welded frame type jack equipped with platinum contacts and a nickel silver sleeve. Terminals of all springs are arranged to accommodate two No. 16 or smaller B & S gauge wires. It is used with 47 and 241 Type Plugs and mounts in the 221 and 222 Type Jack Mountings. With this type of mounting the springs are in the horizontal plane. This jack can be mounted on 7/8" horizontal centers and 5/8" vertical centers.

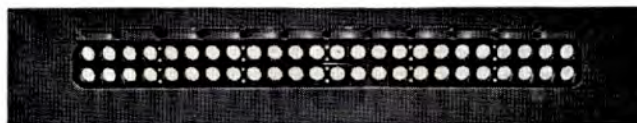
### 410D JACK

A twin jack consisting of a single frame equipped with two plain brass sleeves and two sets of springs. The tip springs are gold plated at the tip end. The 410D is used with the 241 Type Plug and mounts in 221 and 222 Type Jack Mountings. When so used, plugging into one jack of a

pair will disconnect both normal-through connections removing the equipment from the line, to permit testing, either toward the line or toward the equipment as desired.



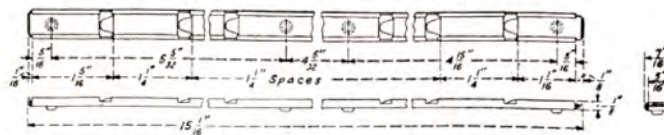
### 221A AND 222A JACK MOUNTING



Consist of one or two jack mounting strips and a metal face mat equipped with a designation strip. The mounting strips are made of hard rubber reinforced with metal strips on top and bottom. The 221A uses one mounting strip with a capacity of 48 jacks (218 or similar type) and occupies 3-1/2" of mounting space on a standard 19" rack or cabinet. The 222A employs two mounting strips with a capacity of 96 jacks and occupies 5-1/4" of 19" rack mounting space.

## DESIGNATION STRIPS

### 90A TYPE DESIGNATION STRIPS



These strips consist of a black finish metal retaining strip. Each designation card holder is arranged to accommodate a card for each pair of jacks or lamps. Use as an additional designation strip with 221A 222A Jack Mountings or for other like applications requiring designation.

## APPARATUS BLANKS

These blanks are designed to fulfill the need for neat appearing covers for blank jack and lamp holes. When inserted in unused apparatus holes they provide finished appearance to the equipment.



## APPARATUS BLANKS



Code No.	Material	Finish	Used
32B	Metal	Black	In unequipped positions of No. 30 lamp sockets.
39B	Metal	Black	In unequipped positions of 218 type and similar jacks and 49 type lamp sockets.

## RESISTANCES

To meet a wide range of circuit requirements and equipment conditions many types of dependable Western Electric Resistances have been developed. Information on all specific types may be had upon request but shown below are the 18 and 19 type Resistances which are unique non-inductive precision resistances of high wattage rating for size. They will dissipate six watts continuously without injury from overheating and are ideal for making up fixed attenuator pads.

### NO. 18 TYPE RESISTANCES

Resistances of the No. 18 Type have a micanite core upon which a single winding is placed. The winding is protected by a covering of sheet mica. The ends of the winding are soldered to tinned terminal posts which are also used for mounting the unit. Each terminal post is provided with two

fibre washers and a hexagonal nut. Will mount on 7/16 inch horizontal centers and 1-3/4 inch vertical.

The overall dimensions are: length, 4-21/32 inches, width, 1-31/64 inches, thickness, 3/8 inch.



The resistance values do not vary more than plus or minus 5 per cent from those rated in the table below. In some cases as noted, the resistance is held to even closer limits. Each resistance will dissipate six watts continuously without injury from heating.

The 600 type mounting plates listed under Relay Mounting Plates, page 80, can be furnished on order drilled to provide for assembling these resistances in compact groups and when so mounted the terminals are conveniently located for making soldered connections.

### NO. 19 TYPE RESISTANCES



These resistances are similar in construction to the No. 18 Type and may be mounted on 7/16 inch horizontal centers and 1-3/4 inch vertical centers. They differ from the No. 18 Type in that two windings are provided and the end of each winding soldered to a center terminal. The two outside terminals are used as mounting posts as in the 18 Type. The resistance values do not vary more than plus or minus 5 per cent from those rated below and in some cases, as noted, the variation is held to closer limits.

### NO. 18 TYPE RESISTANCE VALUES

Code No.	Resistance (Ohms)	Code No.	Resistance (Ohms)	Code No.	Resistance (Ohms)	Code No.	Resistance (Ohms)	Code No.	Resistance (Ohms)
18A	37	18T	50	(b) 18AP	500	18CJ	5	18EM	8600
18B	40	18U	100	18AR	380	18CN	800	18ES	4800
18C	83	18Y	90	18AT	1600	(b) 18CR	2000	(a) 18EU	500
18D	120	18Z	67	(d) 18AY	2.4	(d) 18CU	0.8	18EW	5000
18E	140	18AA	95	18BA	2000	(d) 18CW	1.6	18FB	900
18F	150	18AB	45	(b) 18BE	20	(b) 18DA	1510	18FC	4000
18G	200	18AC	500	18BF	284	18DB	3000	18FG	8080
18H	210	18AD	240	(b) 18BG	400	(b) 18DG	426	18FP	6350
18J	30	18AE	600	18BH	1000	18DH	700	(b) 18FR	3200
18K	80	18AF	300	18BJ	1200	(b) 18DJ	15	(b) 18FS	4250
18L	170	18AG	226	(b) 18BK	1300	(a) 18DP	18.75	(c) 18GL	5545
18N	180	18AJ	400	18BL	750	(b) 18DS	1700	(b) 18GU	8
18P	130	18AK	60	(b) 18BM	1000	18EA	9000	(b) 18GW	5.4
18Q	110	18AL	4	(b) 18BT	200	18EC	6000	(c) 18HH	0.3
18R	10	18AM	250	(b) 18BU	300	(b) 18EE	128	(c) 18HJ	0.5
18S	20	18AN	350	(b) 18BW	100	18EF	2500	(g) 18JC	600
								18JG	220.4

(a) Resistance value does not vary more than plus or minus 1/2%.

(b) Resistance value does not vary more than plus or minus 1%.

(c) Resistance value does not vary more than plus or minus 2%.

(d) Resistance value does not vary more than plus or minus 3%.

(g) Resistance value does not vary more than plus or minus 0.1 of 1%.





NO. 19 TYPE RESISTANCE VALUES

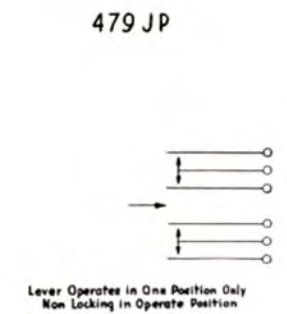
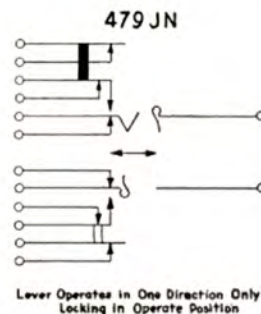
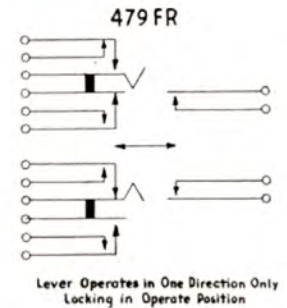
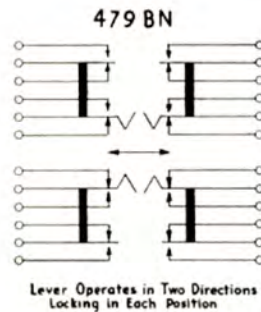
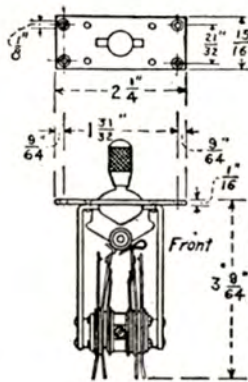
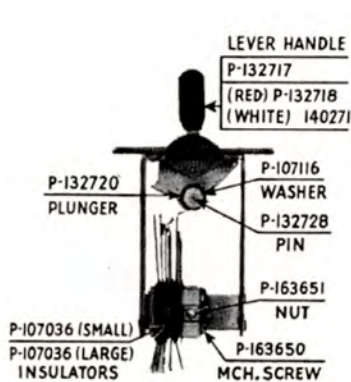
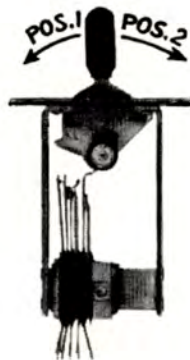
Code No.	Resistance (Ohms)	Code No.	Resistance (Ohms)	Code No.	Resistance (Ohms)	Code No.	Resistance (Ohms)
19A	37 and 37	19AN	260 and 260	(f) 19DN	100 and 100	19GJ	300 and 500
19B	40 and 40	19AP	180 and 180	19DP	0.25 and 0.5	19GL	300 and 300
19C	40 and 83	19AW	2.5 and 2.5	19DR	1 and 2	19GM	400 and 1000
19D	83 and 83	19BA	900 and 900	19DT	150 and 300	(c) 19KG	160 and 2990
19H	40 and 120	19BB	300 and 2300	19DY	500 and 500	(c) 19KH	286 and 1325
19K	100 and 100	19BC	50 and 300	(b) 19EA	115 and 115	(c) 19KJ	467 and 512
19S	60 and 90	19BE	30 and 90	19EB	20 and 330	(c) 19KL	269 and 1490
19T	25 and 25	19BG	200 and 400	19EC	650 and 1600	19KM	84 and 6350
19Z	120 and 120	19BJ	350 and 350	19EW	800 and 800	(c) 19KN	146 and 651
19AD	150 and 150	19BL	1 and 1	(b) 19GA	400 and 600	(a) 19PC	102.6 and 3509
19AH	240 and 240	(b) 19CA	185 and 770	(b) 19GB	80 and 85	(b) 19SR	600 and 800
19AJ	200 and 200	19CN	100 and 200	(b) 19GC	75 and 110	19SS	2500 and 2500
19AM	50 and 50	(b) 19DG	133 and 770	(b) 19GH	425 and 425		

(a) Resistance value does not vary more than plus or minus 1/2%.  
 (b) Resistance value does not vary more than plus or minus 1%.

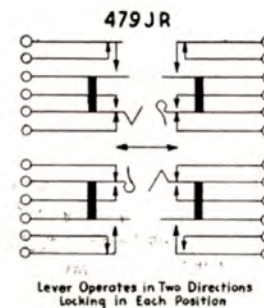
(c) Resistance value does not vary more than plus or minus 2%.  
 (f) The two parts are balanced for resistance within 1% of each other.

KEYS AND KEY UNITS

479 KEY

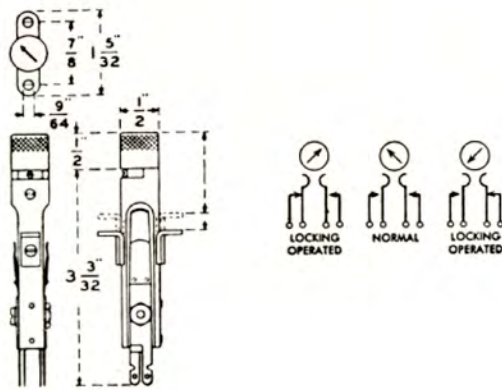


The No. 479 two or three position lever operated type keys have spring combinations mounted in a metal frame. A black finish metal top or face plate 2-1/4" long x 15/16" wide supports the 479 type key for mounting through a large rectangular hole in the front of a wood or metal panel. The face plate covers the mounting hole and is an integral nonremovable part of the key frame. Four No. 4 oval head wood screws are furnished with each key for mounting. Key handle not included; order as required.



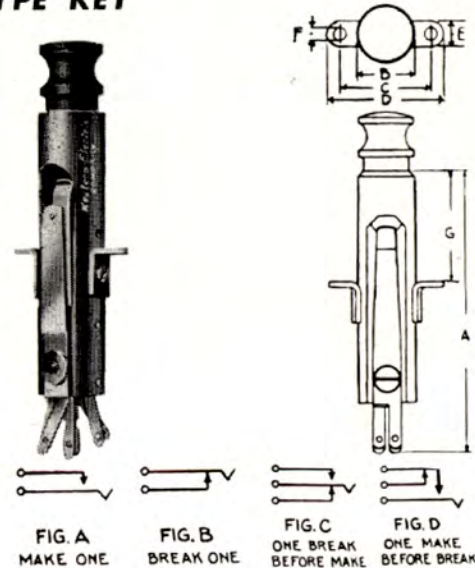


## 498A KEY



Singly mounted rotating type key intended for switching. Arranged to rotate 90 degrees clockwise and 90 degrees counterclockwise from normal; closes a "make" contact in each position except normal; designed to mount on a 7/8" thick panel. Other 498 type keys have a single 90 degree rotation and have various contact arrangements up to six springs.

## 92 TYPE KEY



A singly mounted, mechanically locking type key equipped with a variety of "make" and "break" contacts, up to a capacity of four transfers (twelve springs).

## 92 TYPE SINGLY MOUNTED KEYS

### Singly Mounted Type Keys

**LOCKING TYPE** (Button remains at rest in either operated or unoperated position)

Code No.	No. of Springs	Spring Arrangement	Dimensions (Inches) (See Dimension Cut)						*G			
			A	B	C	D	E	F				
92B (1)	6	2 Sets Fig. C	3-5/32	21/32	1-1/32	1-5/16	9/32	5/32	5/8	11/16	7/8	1-1/4
92D	9	3 Sets Fig. C	3-5/32	21/32	1-1/32	1-5/16	9/32	5/32		11/16	7/8	1-1/4
92H (2)	8	{ 1 Set Fig. A 2 Sets Fig. C }	3-5/32	21/32	1-1/32	1-5/16	9/32	5/32		11/16	7/8	1-1/4
92N (3 & 4)	3	1 Set Fig. C	3-5/32	21/32	1-1/32	1-5/16	9/32	5/32		11/16	7/8	1-1/4
92P (3 & 5)	2	1 Set Fig. A	3-5/32	21/32	1-1/32	1-5/16	9/32	5/32		11/16	7/8	1-1/4
92AA	6	2 Sets Fig. D	3-5/32	21/32	1-1/32	1-5/16	9/32	5/32		11/16	7/8	1-1/4

**NON-LOCKING TYPE** (Button at rest only in unoperated position, spring restoring)

Code No.	No. of Springs	Spring Arrangement	Dimensions (Inches) (See Dimension Cut)						*G			
			A	B	C	D	E	F				
92A (1)	6	2 Sets Fig. C	3-5/32	21/32	1-1/32	1-5/16	9/32	5/32	5/8	11/16	7/8	1-1/4
92J	6	{ 1 Set Fig. A 2 Sets Fig. B }	3-5/32	21/32	1-1/32	1-5/16	9/32	5/32		11/16	7/8	1-1/4
92W	6	2 Sets Fig. D	3-5/32	21/32	1-1/32	1-5/16	9/32	5/32		11/16	7/8	1-1/4
92Y (6)	4	2 Sets Fig. A	3-5/32	21/32	1-1/32	1-5/16	9/32	5/32	1/2	11/16	7/8	1-1/4
92AN	8	{ 1 Set Fig. A 2 Sets Fig. C }	3-5/32	21/32	1-1/32	1-5/16	9/32	5/32		11/16	7/8	1-1/4

(\*) Arranged for thickness of shelf as indicated.

(1) Keys arranged for 7/8" shelf will be furnished unless otherwise specified.

(2) Top of button engraved "MON".

(3) Keys arranged for 1 1/8" shelf will be furnished unless otherwise specified.

(4) Top of button engraved "E".

(5) Top of button engraved "C".

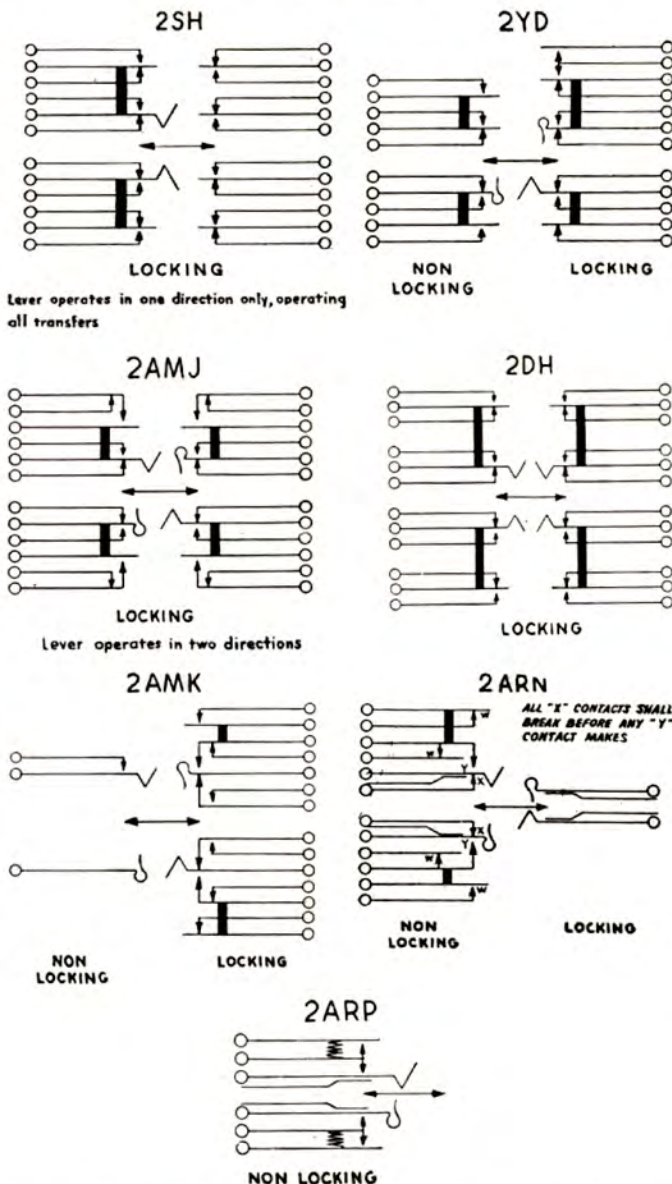
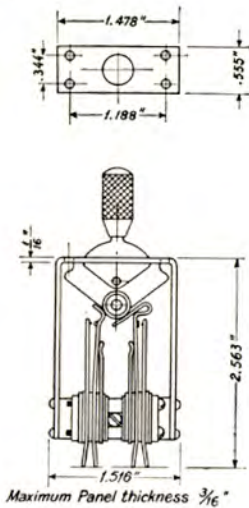
(6) Keys arranged for 1/2" shelf will be furnished unless otherwise specified.







## NO. 2 TYPE KEY UNITS



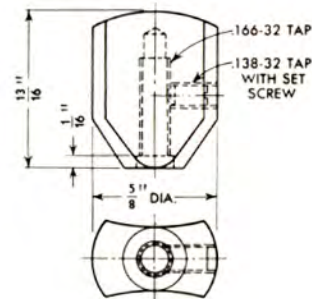
Two and three position lever operated type keys having spring combinations mounted in a metal frame. The op-

eration of these key units is the same as for the 479 type keys described on page 83; the keys are also similar in mechanical arrangement. However, they are arranged for mounting on a metal panel only with a small rectangular slot for the key lever. The metal mounting serves instead of the key top (face plate), the face plates shown on the 479 type being omitted. Usually these switches are mounted on photo etched panels or other types of panels where face plates are unnecessary. Key handle not included; order as required.

A variety of spring combinations are available, some of the more popular of which are shown above.

## KEY HANDLE AND KNOBS

### KS-10011 KEY HANDLE



A decorative flat type key handle with convex finger surfaces for fingertip control of lever type keys such as 479 type keys or 2 type key units. Available in black, red, white, blue or green. Colors must be specified on order.

### KS-10088 KNOB

A black phenol plastic mushroom type knob with skirts and raised pointers to facilitate fingertip control and eliminate cramped hands. It has a chromium bar on the pointer and a chromium indicator line inset in the top of the knob to show the knob setting at a glance. Used on 25, 23 and 22 Type Speech Input Equipments. The depth of the knob is 1-5/16" and the skirt diameter for List 1 is 2-7/16" and for List 2 is 2-1/8". Two set screws are provided 90 degrees apart to insure positive positioning.

### KS-10283 KNOB

Primarily intended for use in Speech Input Equipment and similar applications.

Consists essentially of a black moulded knob having a chromium bar type pointer and equipped with a bushing for use on a 1/4" diameter shaft. Approximately overall dimensions of this knob are 1-3/4" in diameter by 1-1/8" high. Similar to the KS-10088 knob except that it is smaller in size.





## PLUGS

### 47A, 47B PLUGS



For use with a two conductor cord (P2A) and 218 and 225 Type Jacks. The 47A has a red shell and the 47B has a black shell.

### 241A, 241B PLUGS



Double circuit plugs with the brass frames of the two plugs electrically connected to the two plug sleeves. Used with the P2AA and P3J Cords and 218, 225 and 410 Type Jacks when these jacks are mounted in jack mountings such as 221A and 222A. The 241A has a black shell and the 241B has a red shell.

## LAMP SOCKETS

### 47B AND 49B SOCKETS



Singly mounted sockets arranged to take the 2 Type Lamp and the 2 or 72 Type Lamp Cap. The 47B mounts interchangeably with the 218 Type Jack. The 49B mounts on a key shelf or panel 7/8" thick. These sockets are made of brass with nickel silver springs and are insulated with hard rubber. The shell has a nickel plate finish. Brass finish can be had by specifying 47A or 49A type sockets.

## LAMPS

### 2 TYPE LAMPS



High quality carbon or tungsten filament lamps with long life and high illuminating power. They have a tipless,

clear glass bulb, length 1-3/4" and diameter 5/16" and mount in 47 and 49 Lamp Sockets. The special filament and rugged construction provide the user with a lamp that will give long and dependable service.

A 116 lamp tool is required to facilitate insertion and removal of the lamp from its socket.

Code No.	Operating Voltage	Current Consumption	
		Min. Amps.	Max. Amps.
2F	12	.105	0.120
2G*	24	.075	.115
2U	24	.035	.0475
2Y	48	.025**	.035**
A1***	24	.033	.045
E1***	6	.033	.045

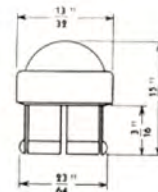
\* The 2G is inherently more rugged than the 2U and provides nearly 3 times as much light.

\*\* Currents at 40 volts.

\*\*\* These lamps are Tungsten filament lamps; the others are carbon filament lamps.

## LAMP CAPS

### 2 TYPE LAMP CAPS



Made from specially selected and treated glass, the lens of this cap is thick and substantial. The cap is slotted to give a spring fit in the socket. It is available in a variety of surface treatments and colors including red, white, blue, green, and amber opalescent; jeweled red, blue, and green; and clear amber. The 2 Type Lamp Cap mounts in the 47 and 49 Type Lamp Sockets. In order to facilitate removal of the lamp caps for maintenance purposes a 319B lamp cap tool is required.

### No. 2 Type Lamp Caps

Code No.	Symbol	Color
2H	○	Red opalescent
2L	○	Green opalescent
2P	●	Jeweled red
2S	●	Jeweled green
2U	○	Amber opalescent
2W	○	Blue opalescent
2AY	○	White opalescent
2BP	●	Clear Amber



## 72 TYPE LAMP CAPS



Similar to the 2 Type Lamp Cap except that the lens has a flat top with translucent numbers engraved on a black background (single characters), or black characters on white, red or green backgrounds (up to four characters). Mounts in the 47 and 49 Type Lamp Sockets.

### No. 72 Type Lamp Caps

Code No.	Symbol	Color
72A	①	Translucent on black
72B	①	Translucent on black
72C	②	Translucent on black
72D	③	Translucent on black
72E	④	Translucent on black
72F	⑤	Translucent on black
72G	⑥	Translucent on black
72H	⑦	Translucent on black
72J	⑧	Translucent on black
72K	⑨	Translucent on black
*72L	⑩	Black on white, red or green
*72M		
*72N		

\* Characters as specified in order. One, two, or three characters will be arranged on one line, four characters on two lines.

## WIRE

### J1 WIRE

Solid, tinned conductors, two cotton braids, asphaltic impregnation. Obtainable in 18, 20, 22, and 24 gauges; singles only; black only.

### KS-13385 WIRE

This hookup wire is designed for use at operating voltages of 600 volts rms or less and temperatures not exceeding 185F. This wire consists of solid or stranded tinned copper conductor insulated with a polyvinyl chloride covered with a cotton braid and a coat of lacquer.

It can be obtained in AWG conductor sizes 22, 20, 18, 16, 14, 12, 10 and 8 stranded and numbers 22, 20, 18, 16 and 14 solid in singles, pairs, triples, quads or other combinations. It is furnished in various colors designated by colored thread in the outer part. The order should include

reference to KS-13385 and specify the quantity, feet, gauge and numbering, conductors, color and whether solid or stranded. For color combinations consult our nearest distributor.

### P2 WIRE

Designed primarily for high grade transmission circuits and for general use where a shielded wire is required. Tinned enameled conductors, double cellulose acetate yarn, single cotton and lacquer coated. The wires are covered with a braided shield of tinned copper wires with a 22 gauge tinned copper wire running longitudinally under the shield for grounding purposes. The braided shield is covered with a paper tape and a gray cotton braid. Both the cotton braid and the braided shield may be readily pushed back in terminating the wires. Obtainable in 22 gauge; single, pair, and triple, and in a variety of colors. For color combinations please consult our nearest distributor.

## CABLE

### LEAD COVERED CABLE FOR INSIDE CONSTRUCTION

Western Electric lead covered cable possesses several advantages of material benefit to users. It makes use of the most suitable designs and materials to secure and maintain high quality cable construction. The design is such as to insure ease of handling without tendency to buckle. Manufacture is controlled to keep moisture content to a minimum. Sheathing and insulation are of uniform thickness and have a maximum of mechanical ruggedness as a protection against damage.

These cables are ideally suited for inter-studio relay circuit and speech input equipment wiring.

### TYPE "OUA" LEAD COVERED CABLES

**Conductors:** No. 22 A. W. gauge — tinned.

**Insulation:** Enamel, double cotton, lacquered, each pair distinguishable from every other pair.

**Core:** Not impregnated.

**Sheath:** Pure lead.

**Conductor Resistance:** Not greater than 96 ohms per mile of cable at 68 degrees Fahrenheit.

**Insulation Resistance:** Not less than 20 megohm miles at 60 degrees Fahrenheit.

**Dielectric Strength:** Insulation between conductors and between conductors and sheath capable of withstanding a-c potentials having maximum instantaneous values of 700 and 1415 volts, respectively.

Intended for interior construction.





Code	Actual Number of Pairs	Number of Good Pairs	Mean Outside Diameter (Inch)	Thickness of Sheath (Inch)	Approx. Lbs. per Foot
OUA6	6	6	0.33	0.040	0.21
OUA11	11	11	.41	.043	.30
OUA16	16	16	.47	.045	.38
OUA21	21	21	.51	.047	.46
OUA26	26	26	.57	.049	.53
OUA31	31	31	.60	.050	.58
OUA41	41	41	.69	.053	.71
OUA51	51	51	.75	.056	.86
OUA76	76	76	.89	.061	1.1
OUA101	101	101	1.01	.065	1.4

**TYPE "BUA" LEAD COVERED CABLES**

**Conductors:** No. 22 A. W. gauge — tinned.

**Insulation:** Double cellulose acetate yarn, single cotton, lacquered, each pair distinguishable from every other pair.

**Core:** Not impregnated.

**Sheath:** Pure lead.

**Conductor Resistance:** Not greater than 96 ohms per mile of cable at 68 degrees Fahrenheit.

**Insulation Resistance:** Not less than 10 megohm miles at 60 degrees Fahrenheit.

**Dielectric Strength:** Insulation between conductors and between conductors and sheath capable of withstanding a-c potentials having maximum instantaneous values of 700 and 1415 volts, respectively.

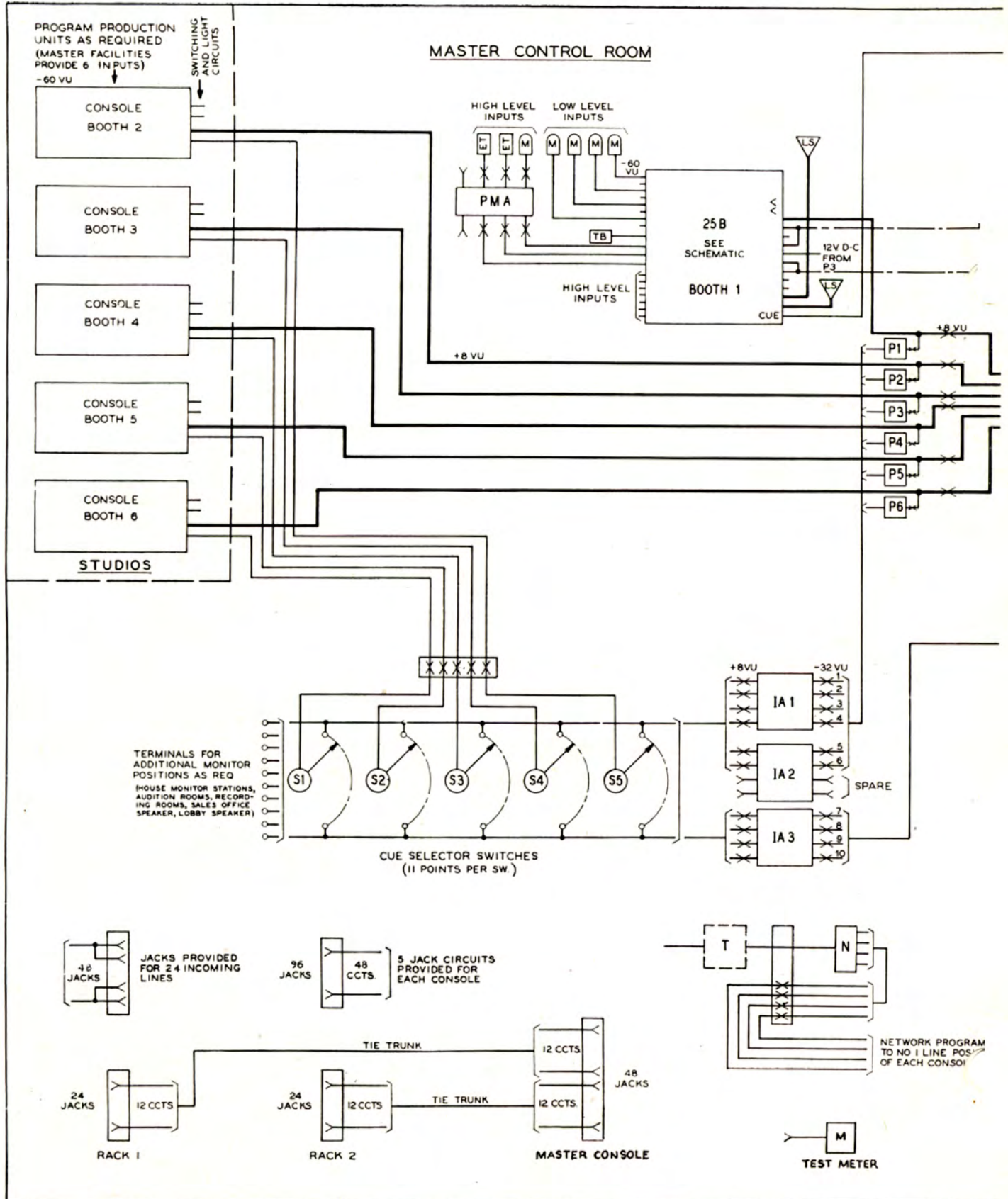
Intended for interior construction.

Code	Actual Number of Pairs	Number of Good Pairs	Mean Outside Diameter (Inch)	Thickness of Sheath (Inch)	Approx. Lbs. per Foot
BUA6	6	6	0.32	0.040	0.20
BUA11	11	11	.41	.043	.28
BUA16	16	16	.45	.045	.36
BUA21	21	21	.50	.047	.44
BUA26	26	26	.55	.048	.49
BUA31	31	31	.58	.049	.56
BUA41	41	41	.67	.053	.69
BUA51	51	51	.74	.055	.82
BUA76	76	76	.87	.060	1.1
BUA101	101	101	.99	.065	1.4

*Typical applications of Western Electric Audio Facilities are shown on pages 90, 91, 92, and 93. For index and distribution lists see pages 94, 95, and 96.*

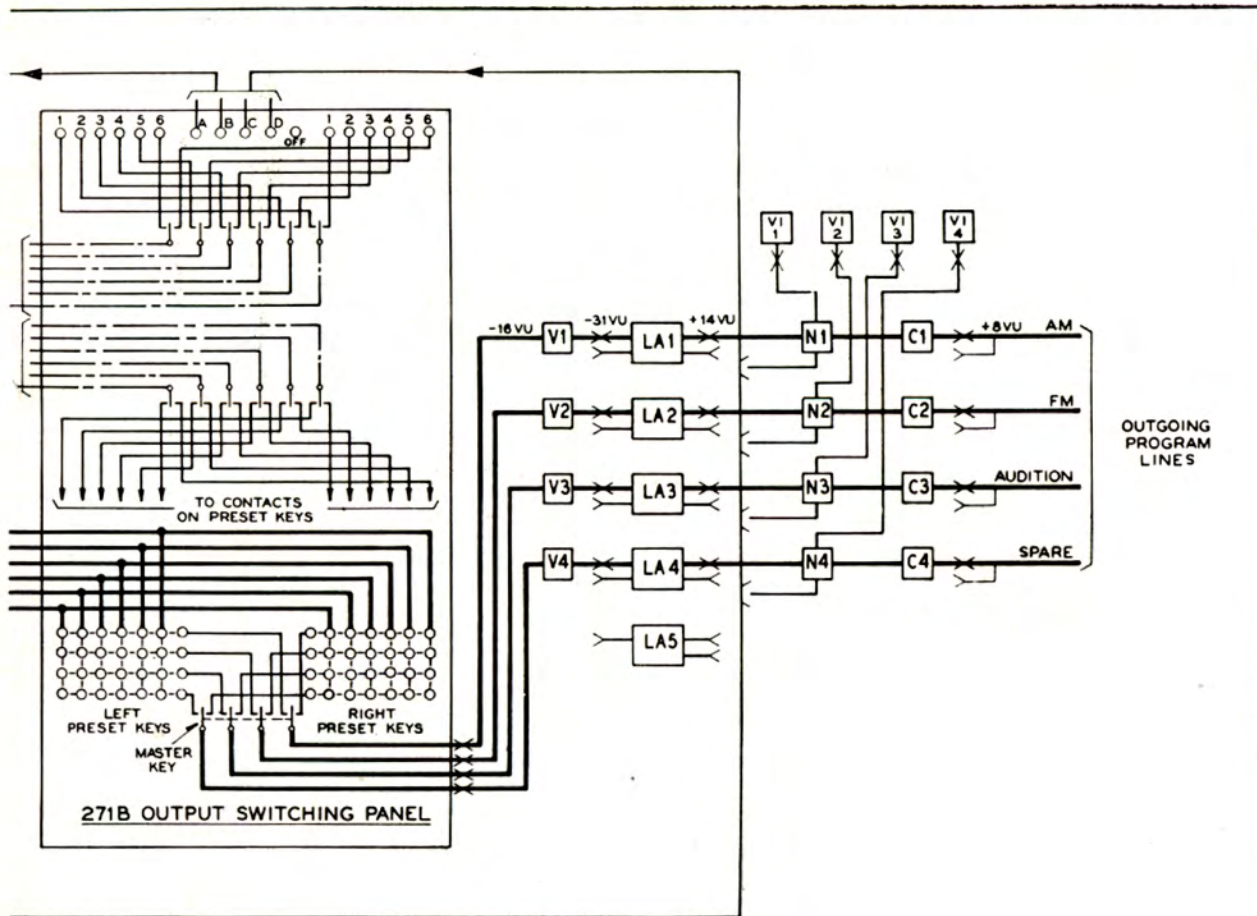


**MASTER CONTROL**

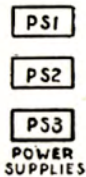
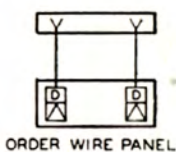
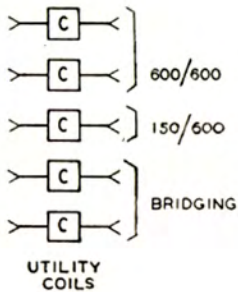
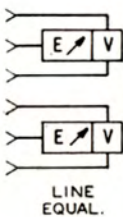


Functional Schematic, Master Control, Featuring Key Switching.





OUTGOING PROGRAM LINES



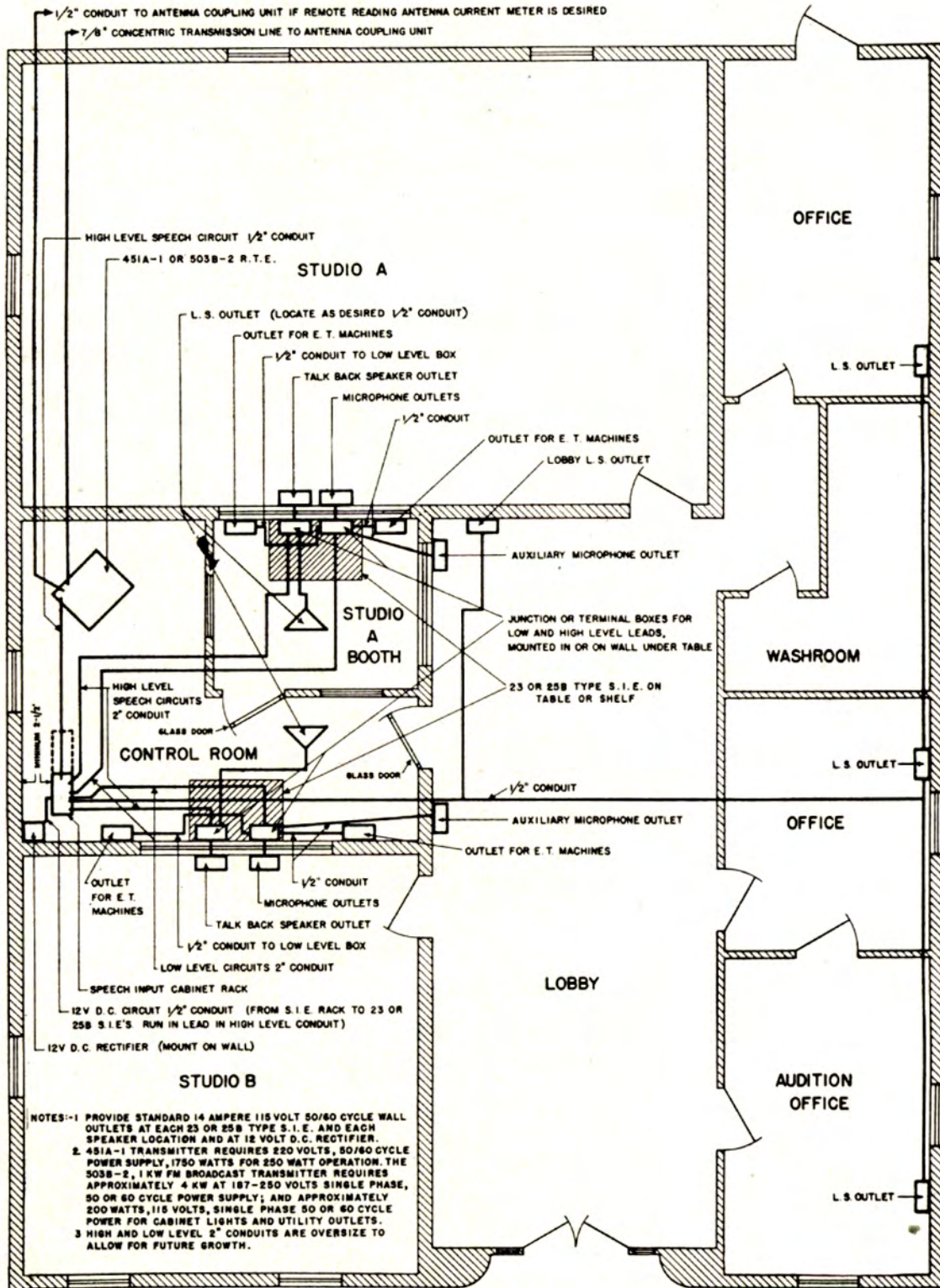
NOTE:

- AMPLIFIERS:  
 IA1 TO IA3 INCL., AND PMA ----- 129A  
 LA1 TO LA5 INCL. ----- 106A  
 PS1, PS2 ----- 20B  
 PS3 ----- KS 7593
- REPEAT COILS:  
 C1 TO C4 INCL. ----- 119C
- ATTENUATORS V1 TO V4 INCL., ARE 20-STEP ROTARY CONTROLS: 16 STEPS, 2 DB PER STEP; 4 STEPS TAPERED TO OFF

(Functional Schematic, continued)



**STUDIO LAYOUT**



A Typical Studio Layout.







*Western Electric*

