

Western Electric Company

No. 124-B AMPLIFIER

COMMERCIAL PRODUCTS APPARATUS REFERENCE SHEET

NO	1-27
AMPLIFIER	
124B	

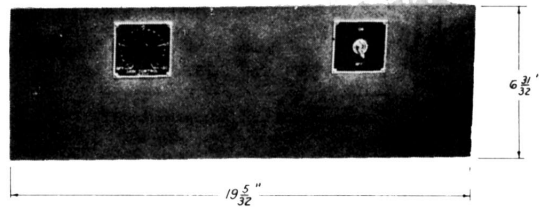
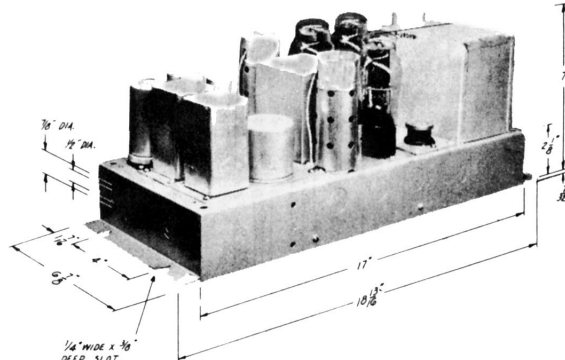
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GENERAL

This is power amplifier similar to the 94-type, intended for general use in the telephone plant.

ELECTRICAL CHARACTERISTICS

Gain(w.E.Tubes)*	These depend on the input strapping used. See other side of this sheet
Source Impedance)	
Internal)	
Input Impedance)	
Gain Control	38 db in 2 db steps
Load Impedance	1-1200 ohms Nominal load impedances - 600, 150, 30, 16, 7.5 or 1.75 ohms, terminals 13 and 14 See strapping data on schematic
Internal Output Impedance	3/4 of nominal load impedance With strapping for 600 ohm load impedance, the use of terminals 16 and 17 gives an internal output impedance of 600 ohms.
Output Power	12 watts, 2.0% total harmonics at 400 cycles into nominal load impedance May be reconnected for 20 watts with 5% harmonic content
Output Noise	Unweighted, -37 db relative to .001 watt
Maximum Input	Depends on input strapping used. See other side of this sheet.
Power Supply	105-125 volts, 50-60 cycles. Using 12 watt output, 1.1 amperes, 105 watts Using 20 watt output, 1.25 amperes, 125 watts Fused with 1.25 amp. Buss Fustat on chassis Power switch furnished



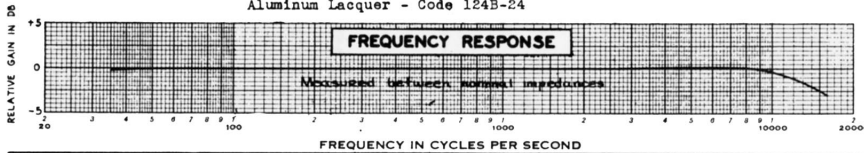
EQUIPMENT CHARACTERISTICS

Dimensions	See photograph.
Weight	20 pounds.
Vacuum Tubes	W.E. or R.C.A. 2-348A or 2-6J7 or 6J7G 2-350B or 2-6L6 or 6L6G 1-274B or 1-5T4 or 5U4G
Finish	Chassis, Aluminum Lacquer Mat, Black Enamel - Code 124B-3 Aluminum Grey - Code 124B-15 Aluminum Lacquer - Code 124B-24

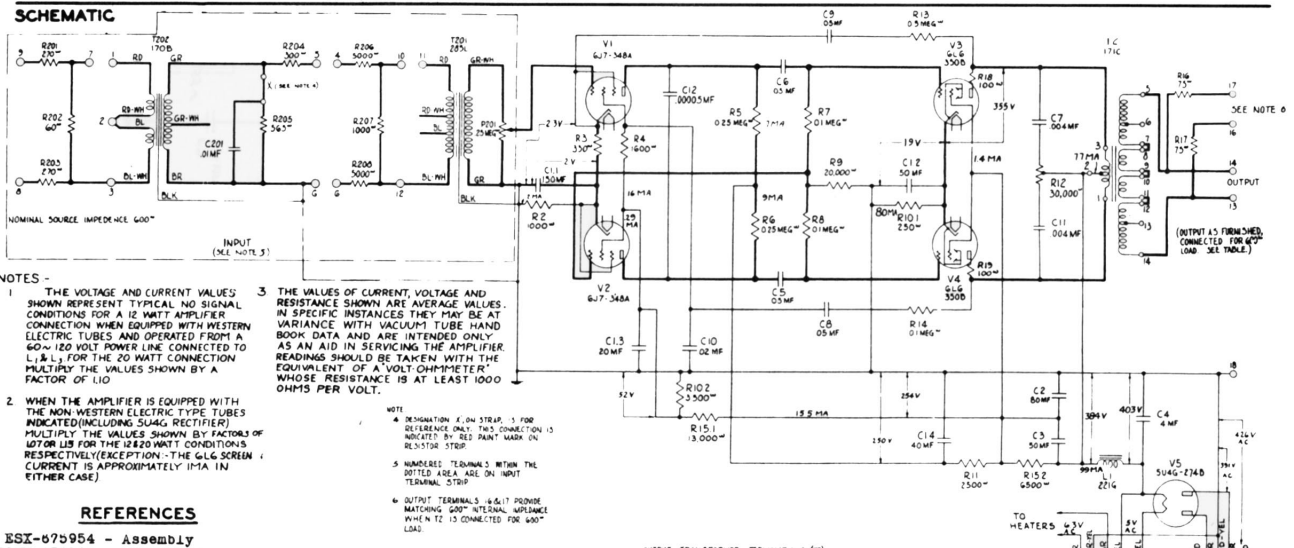
Connections - All external connections are normally made to terminals under the chassis, and knockouts are provided in the ends of the chassis to admit the wires. Additional knockouts are provided in the sides of the chassis where sockets may be installed if plug and socket connections are desired. Plugs and sockets which may be used are as follows:

- Connectors to mount on chassis:
- For Input Circuit - Amphenol FC4F Compact Chassis Connector
 - For Output Circuit - Amphenol FC3F Compact Chassis Connector
 - For Power Circuit - H&H #754 Flush Receptacle

- connectors to use on cords:
- For Input Circuit - Amphenol MC4M Microphone Connector
 - For Output Circuit - Amphenol MC3M Microphone Connector
 - For Power Circuit - H&H MB Cap



SCHEMATIC



NOTES -

- THE VOLTAGE AND CURRENT VALUES SHOWN REPRESENT TYPICAL NO SIGNAL CONDITIONS FOR A 12 WATT AMPLIFIER CONNECTION WHEN EQUIPPED WITH WESTERN ELECTRIC TUBES AND OPERATED FROM A 60-120 VOLT POWER LINE CONNECTED TO L1 & L2 FOR THE 20 WATT CONNECTION MULTIPLY THE VALUES SHOWN BY A FACTOR OF 1.10
- WHEN THE AMPLIFIER IS EQUIPPED WITH THE NON-WESTERN ELECTRIC TYPE TUBES INDICATED (INCLUDING 5U4G RECTIFIER) MULTIPLY THE VALUES SHOWN BY FACTORS OF 1.07 FOR L15 FOR THE 12 WATT CONNECTIONS RESPECTIVELY (EXCEPTION - THE 6L6 SCREEN CURRENT IS APPROXIMATELY 1.10 MA IN EITHER CASE)
- THE VALUES OF CURRENT, VOLTAGE AND RESISTANCE SHOWN ARE AVERAGE VALUES. IN SPECIFIC INSTANCES THEY MAY BE AT VARIANCE WITH VACUUM TUBE HAND BOOK DATA AND ARE INTENDED ONLY AS AN AID IN SERVICING THE AMPLIFIER READINGS SHOULD BE TAKEN WITH THE EQUIVALENT OF A VOLT-OHM-METER WHOSE RESISTANCE IS AT LEAST 1000 OHMS PER VOLT.
- REMARK: R10A STRAP, 1 FOR REFERENCE ONLY THIS CONNECTION IS INDICATED BY RED STRAP MARK ON RES-STRAP STRIP
- NUMBERS TERMINALS WITHIN THE DOTTED AREA ARE ON INPUT TERMINAL STRIP
- OUTPUT TERMINALS #4 & #17 PROVIDE MATCHING 500 OHM INTERNAL IMPEDANCE WHEN #12 IS CONNECTED FOR 400 OHM

REFERENCES

- ESX-875954 - Assembly
- ESX-876164 - Schematic
- ESX-876167 - Wiring Diagram
- ES-745902 - Longitudinal Characteristic
- ES-745403 - Internal Imp. and Out. Impedance Characteristic
- ES-746079 - Phase Shift Characteristic
- ES-746281 - Harmonics Characteristic

Photographs
92119
92124

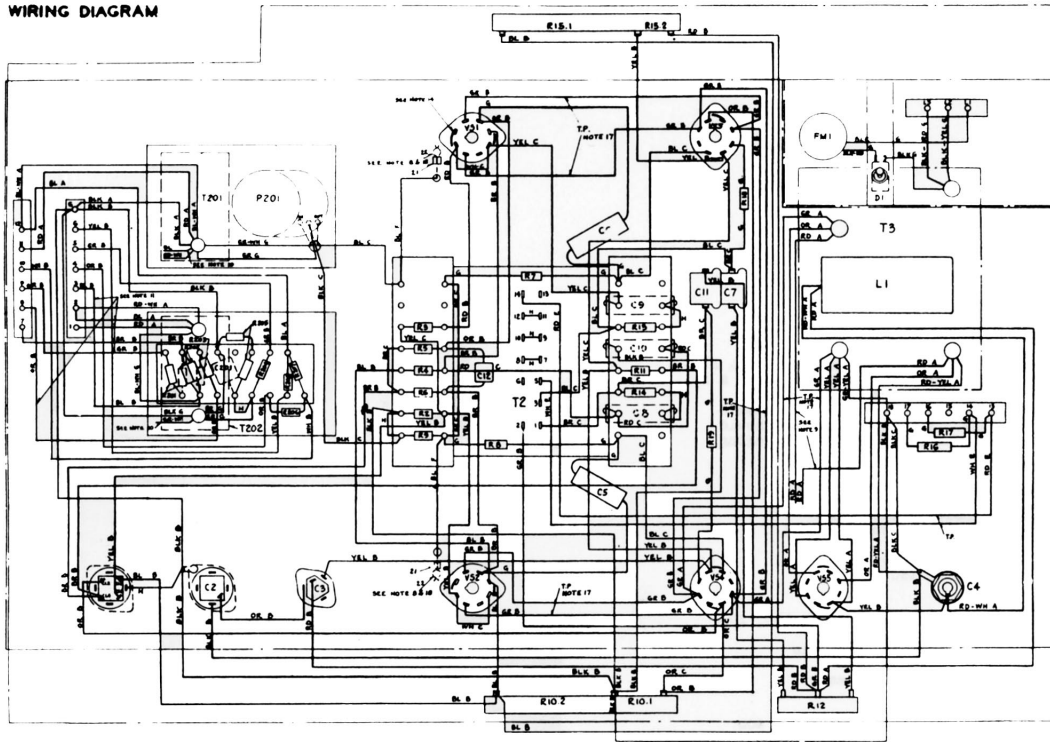
NOMINAL LOAD IMPEDANCE	WORKING RANGE OF LOAD IMPEDANCE	STRAP TERMINALS	OUTPUT CONNECTIONS
600*	500 TO 800*	7, 8, 9, 10	13, 14
150*	100 TO 200*	11, 12, 13, 14	15, 16
30*	20 TO 40*	15, 16, 17	13, 14
16*	10 TO 20*	17, 18, 19	15, 16
7.5*	5 TO 10*	19, 20, 21	13, 14
1.75*	1 TO 2*	22, 23, 24	15, 16

105-125V 50-60 CYCLES
125 WATTS 1.25 AMPS MAX. 125 AMP

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No. 124-B AMPLIFIER

WIRING DIAGRAM

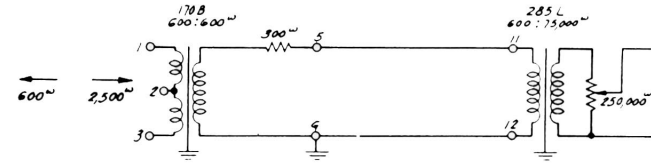


NO.	DESCRIPTION	QTY.	REMARKS
1	6X4	1	See Note 1
2	6AR5	1	See Note 2
3	6AV6	1	See Note 3
4	6X4	1	See Note 4
5	6AR5	1	See Note 5
6	6AV6	1	See Note 6
7	6X4	1	See Note 7
8	6AR5	1	See Note 8
9	6AV6	1	See Note 9
10	6X4	1	See Note 10
11	6AR5	1	See Note 11
12	6AV6	1	See Note 12

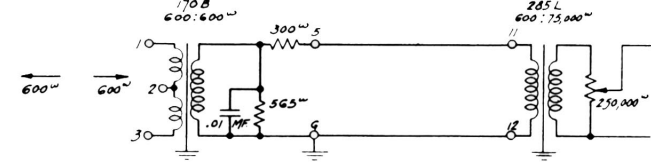
NOTES

1. ALL WIRE AND TERMINALS ARE TO BE APPROXIMATELY 1/16" IN DIAMETER.
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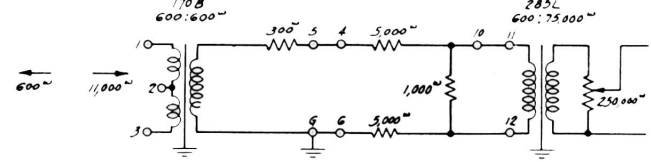
124B Amplifier - Input Arrangement #1
Gain 66.6 db Measured between nominal impedances;
Gain Control 38 db in 2 db steps
Maximum Input 2.4V single frequency
Use Primarily designed for associate company use. Meets Bell System longitudinal balance requirement.
 *Gain 0.7 db less with RCA tubes



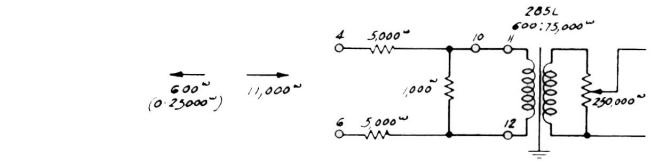
124B Amplifier - Input Arrangement #2
Gain 60.6 db Measured between nominal impedances;
Gain Control 38 db in 2 db steps
Maximum Input 2.4V single frequency
Use Same as for Input Arrangement #1 where an internal input impedance of 600 ohms is required.
 *Gain 0.7 db less with RCA tubes



124B Amplifier - Input Arrangement #3
Gain 45.4 db Measured between nominal impedances;
Gain Control 38 db in 2 db steps
Maximum Input 2.4V single frequency
Use Same as Input Arrangement #1 where a high internal input impedance is required for bridging purposes.
 *Gain 0.7 db less with RCA tubes



124B Amplifier - Input Arrangement #4
Gain 45.4 db Measured between nominal impedances;
Gain Control 38 db in 2 db steps
Maximum Input 38.5V single frequency
Use For bridging purposes where levels higher than 0 vu are encountered. This arrangement does not meet the longitudinal balance requirement.
 *Gain 0.7 db less with RCA tubes



124B Amplifier - Input Arrangement #5
Gain 35.6 db Measured between nominal impedances;
Gain Control 38 db in 2 db steps
Maximum Input 10V single frequency
Use Same as Input Arrangement #1 where an internal input impedance of 600 ohms is required, and where levels higher than 0 vu are encountered.
 *Gain 0.7 db less with RCA tubes

