

## STATION SYSTEMS—POWER SUPPLY

### IDENTIFICATION

#### 1.00 INTRODUCTION

**1.01** This section covers identification of the 101A, E, G, H, and J power plants, and J86205 rectifiers.

**1.02** This section is reissued to:

- Add information on power cords.
- Remove information on 393B and KS-5714 transformers.

**1.03** Information on 393B and KS-5714 transformers will be found in Section C18.066.

**1.04** Due to extensive changes, marginal arrows have been omitted.

#### 2.00 GENERAL

Table A shows power plants and rectifiers now equipped with 3-conductor power cords.

**TABLE A**  
**POWER PLANTS AND RECTIFIERS EQUIPPED WITH**  
**3-CONDUCTOR POWER CORDS**

Power Plants			Rectifiers
101G	101H	101J	J86205B, List 3 and 4
J86731A, List 4, 5, 6	J86736A, List 1	J86471B, List 1	J86205C, List 1
J86731B, List 1			J86205F, List 1 and 2
J86731C, List 1			
J86731D, List 1			

#### 3.00 101A POWER PLANT

**3.01** The 101A power plant supplies 15 to 26 volts dc with 10-ampere-hour capacity, or 15 to 19 volts dc with 15-ampere-hour capacity. It consists of a J59010, List 1 metal cabinet and a KS-5538 battery.

**3.02** The cabinet is the same size as the 4-plate apparatus cabinet. It contains a charge control circuit and fuses (see Fig. 1).

**3.03** The cabinet will house any one of the batteries listed in Table B.

**TABLE B**  
**KS-5538 BATTERY**

List	No. of Cells	Amp-Hr	Voltage Range
3	8	10	15-19
5	8	15	15-19
16	9	10	17-21
17	10	10	19-24
18	11	10	21-26

**3.04** This power plant may be charged over cable pairs from the central office or with a local charger of the J86205 type.

#### 4.00 101E POWER PLANT

**4.01** The 101E power plant supplies 21 to 26 volts dc with 15- or 30-ampere-hour capacity. It consists of a J86566A, List 1 olive-green or List 9 gray-green metal cabinet and a set of KS-5538 batteries.

**4.02** The cabinet contains a charge control circuit and fuses, and will house the rectifier and either one of the following batteries:

- *J86566A, List 6 rectifier* includes the J86205F, List 1 rectifier; 71K inductor; and 5A ballast lamp.
- *J86566A, List 7 battery* includes the 11-cell, 15-ampere-hour, 21- to 26-volt, KS-5538, List 12 battery; hydrometer syringe and holder; and vent plug thermometer.
- *J86566A, List 8 battery* includes the 11-cell, 30-ampere-hour, 21- to 26-volt, KS-5538, List 13 battery; hydrometer syringe and holder; and vent plug thermometer.

**4.03** This power plant may be charged over cable pairs from the central office or with a local charger.

## 5.00 101G POWER PLANTS

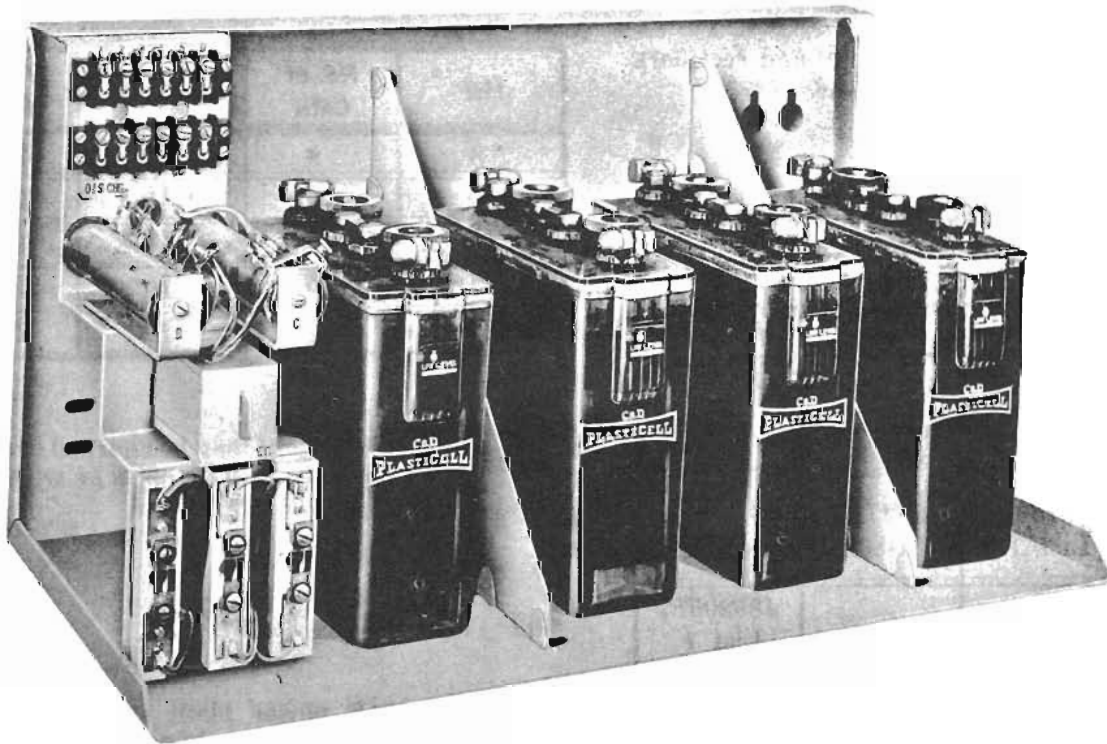
**5.01** The 101G power plants are used primarily to supply power for 1A, 1A1, and 6A key telephone systems.

**5.02** The 101G power plants J86731A, List 5 and List 6 (see Fig. 2), J86731B, List 1 (see Fig. 3), and J86731C, List 2 are mounted in beige-gray metal cabinets with removable covers. These cabinets are approximately 9 inches high, 8-1/4 inches wide, and 5-1/4 inches deep.

**5.03** The cabinet for the J86731A, List 4 power plant (see Fig. 4) is the same as mentioned in 5.02, except that it is 16-13/16 inches wide.

**5.04** These power plants are furnished with a backboard for wall mounting.

**5.05** The J86731A, List 7 metal stand (see Fig. 5) consists of two metal legs and is used to floor-mount a J86731A, List 4 power plant.



**Fig. 1 — 101A Power Plant, Cover Removed**



Fig. 2 - J86731A, List 6, Cover Removed



Fig. 3 - J86731B, List 1, Cover Removed

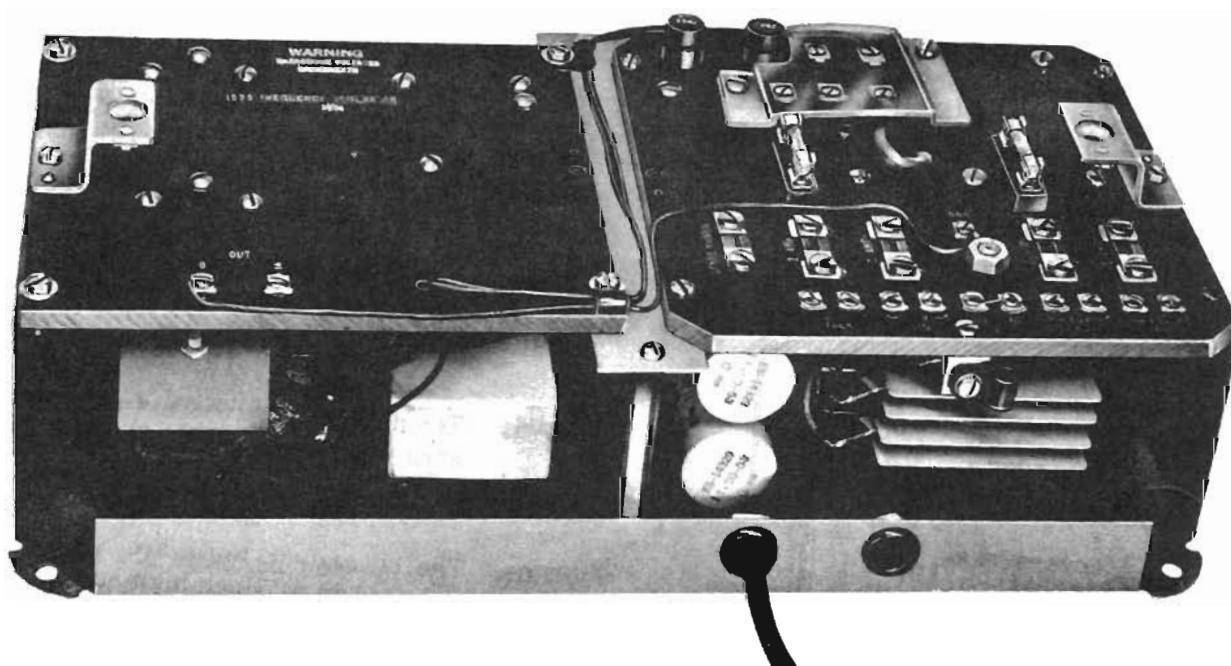


Fig. 4 - J86731A, List 4, Cover Removed

Where appearance is important, the exposed portion of the metal legs may be covered with the ED-95023-01, Group 5 cover.

**5.06** The J86731C, List 1 (107C) power plant is not housed in a cabinet, but is arranged to mount in a KTU apparatus cabinet or on a relay rack. It occupies a space 7 inches high, 9-1/8 inches wide, and extends 4-1/2 inches in front of the mounting bars. (See Fig. 6.)



*Do not mount J86731C, List 1 power plant directly adjacent above or below a 207C KTU. Minimum separation between units shall be 12 inches.*

**5.07** The J86731C, List 2 (107C) power plant is a wall-mounted unit and includes a 107C frequency generator in a cabinet per ED-81550-01 with line cord and backboard. The list 2 unit is similar to the list 5 unit which contains the 107B frequency generator.

**5.08** The J86731D, List 1 power plant is electrically equivalent to the wall-mounted J86731A, List 6 unit, but is arranged to mount in a KTU apparatus cabinet or on a relay rack or in a key telephone system KSU. It occupies a space 7 inches high, 9 inches wide, and extends 4-1/2 inches in front of mounting bars. (See Fig. 6.)

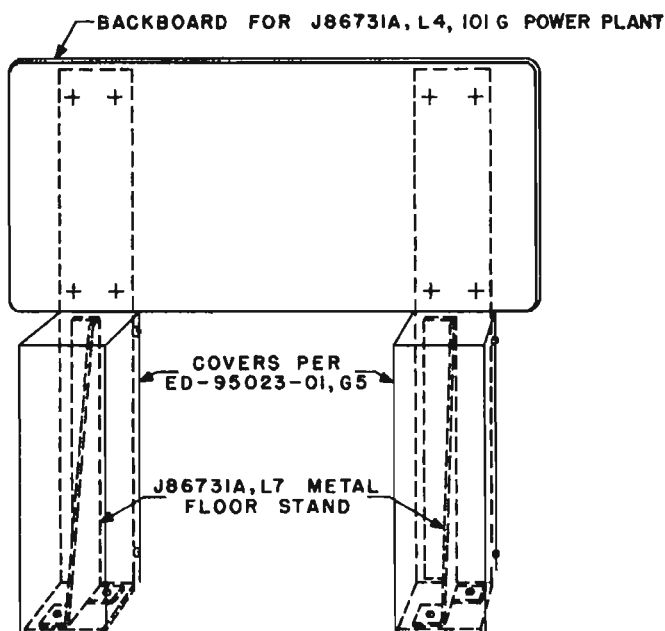


Fig. 5 — Floor Stand for J86731A, List 4 Power Plant

**5.09** Table C lists the outputs of the 101G plants.

## 6.00 101H POWER PLANT

**6.01** The 101H power plant J86736A, List 1 is designed to furnish ac and dc voltages required by small key systems.

**6.02** This power plant is mounted in a 105-type apparatus box (see Fig. 7). Its output is listed in Table D.

## 7.00 101J POWER PLANT

### J86471A

**7.01** This power plant is designed primarily for use with 6A key telephone systems and 550-type PBX.

**7.02** The J86471A power plant consists of two units: a list 1 or 3 ac unit (see Fig. 8) and a list 1 or 3 dc unit (see Fig. 9). Lists 1 and 3 are the same mechanically and electrically. List 1 has a 162A regulator, and list 3 has a KS-15909, List 1 regulator.

**7.03** The ac unit supplies 10-volt 5-amp alternating current and 18-volt 1.6-amp. alternating current.

**7.04** The dc unit is connected to the ac unit by a cord and supplies 18- or 24-volt 4-amp filtered direct current.

**7.05** The ac and dc units are arranged to be mounted in a 7-inch-high space on a relay rack or equivalent. When mounted side by side the units occupy a space 20-1/2 inches wide.

**7.06** The ac and dc units plus the J86731C, List 1 101G power plant may all be mounted on a 16- or 26-type apparatus mounting enclosed beneath a suitable cover.

**TABLE C**  
**OUTPUTS OF THE 101G POWER PLANTS**

101G Power Plant	Supplies	Voltage Range	Amp	Load
J86731A, List 6	20V TALK (dc)	14-28	0.9	
	20V SIG (dc)	18-28	0.6	
	10V AC (60 cycle)	9-11	1.4	36 51A lamps — or —
		8.75-11	2.8	72 51A lamps — or —
	18V AC (60 cycle)	16-20	1.4	36 A3 lamps
J86731A, List 5 (107-B)	$\pm$ G (20-cycle ringing)	75-110	0.05	Eight high-impedance ringers, or two high-impedance ringers with capacitors.
J86731A, List 4	The combined features of lists 5 and 6			
J86731B, List 1	10V AC (60 cycle)	10-11	17	425 51A lamps
J86731C, List 1 or 2 (107-C) (See 5.06)	$\pm$ G (20-cycle ringing)	75-105 64-90	0.05	Eight high-impedance ringers, or six high-impedance ringers with capacitors
J86731D, List 1 (See 5.07)	Same features as J86731A, List 6			

**TABLE D**  
**OUTPUT OF THE 101H POWER PLANT**

101H Power Plant	Supplies	Voltage Range	Amp	Load
J86736A, List 1	20V TALK (dc)	14-26	0.15	
	10V AC* (60 cycle)	8.75-11	0.09	Two 51A lamps
	18V AC* (60 cycle)	16-21	0.09	Two A3 lamps

\* A total of 0.09 amp is available from either the 10-volt or the 18-volt winding, or from a combination of these two windings. In addition, this supply will be sufficient to operate a 7A buzzer intermittently.

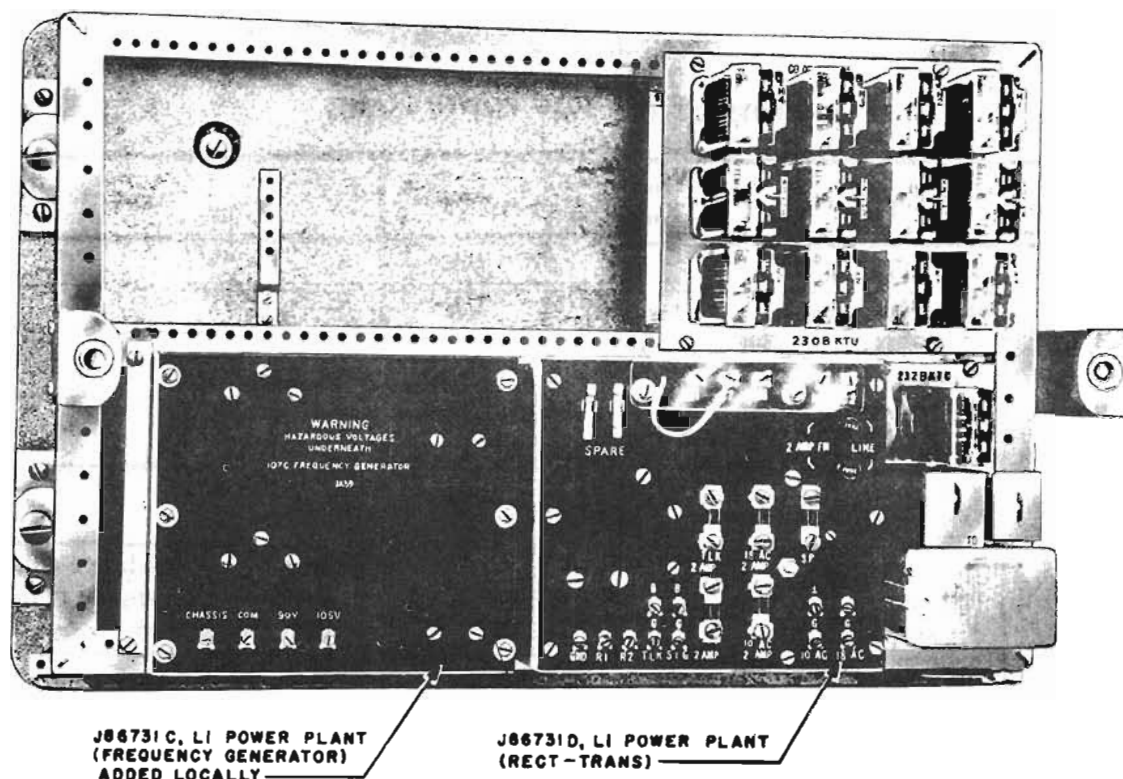
**7.07** The ac and dc units may be wall mounted one over another in the J86471A, List 2 cabinet (see Fig. 10).

#### J86471B

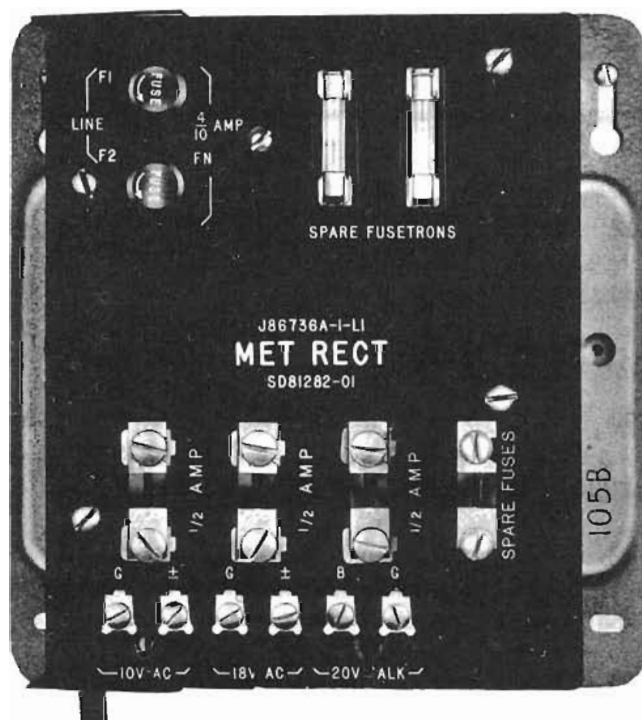
**7.08** This power plant replaces the J86471A, List 1 power plant. A KS-15909, List 3 regulator is used in this rectifier.

**7.09** This unit may be mounted in a 16- or 26-type apparatus mounting. It also occupies a 7-inch-high space.

**7.10** Seven 10-volt terminals and one 18-volt terminal, fused at 2 amp each, provide ac power for lamp or signal circuits. Terminals for selecting 18- or 24-volt dc output are available on



**Fig. 6 – Power Plants Mounted on 16A Apparatus Mounting**



**Fig. 7 — 101H Power Plant, Cover Removed**

the right end of the removable front panel. Six 2 amp dc terminals are provided. The normal dc output is 24 volts. An 18-volt dc output should be furnished when the plant is used with 550- or 551-type PBX equipped with 15 cords. For such use, 18-volt output may be obtained by changing connections at terminals marked RECTIFIER TAPS.

## 8.00 J86205-TYPE RECTIFIERS

**8.01** Table E gives the list number, input voltage, output voltage, and principal uses of the J86205-type rectifiers.

**8.02** The J86205B and F rectifiers are housed in the case shown in Fig. 11. This case is approximately 8-1/2 inches long, 6-1/2 inches high, 6-1/2 inches deep, and is designed for wall or shelf mounting.

## 9.00 POWER REQUIREMENTS – STATION SIGNALS

Current values of commonly used signals are shown in Table F.

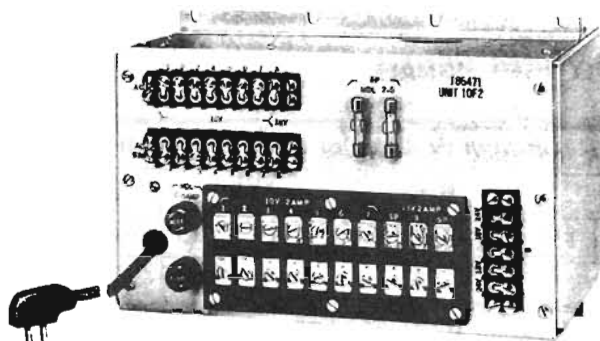


Fig. 8 — J86471A, List 1 or 3 AC Unit

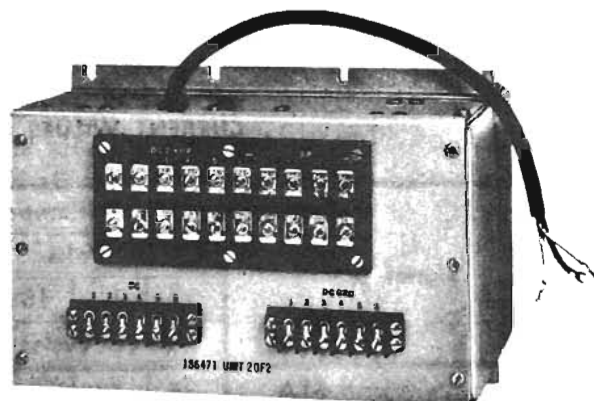


Fig. 9 — J86471A, List 1 or 3 DC Unit

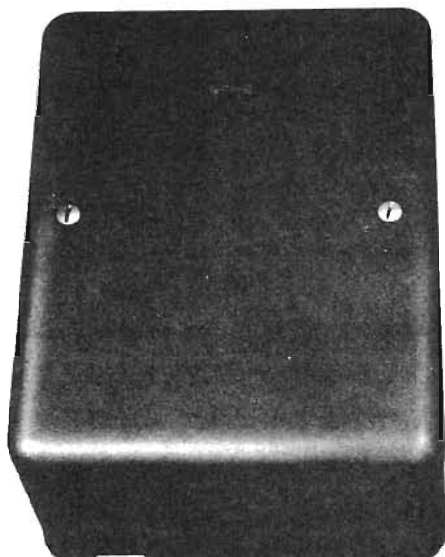


Fig. 10 — J86471A, List 2 Cabinet



Fig. 11 — J86205B or F Rectifier

TABLE E

J86205-TYPE RECTIFIERS

Unit	Input		Output		Principal Use
	volts	cycles	volts	amp	
J86205B, List 3	105-125	50-60	17-22 dc	0.5	To charge batteries of 101A power plant.
J86205B, List 4	190-250	50-60	17-22 dc	0.5	
J86205F, List 1	105-125	50-60	24 dc	1.2	To charge batteries of 101E power plant.
J86205F, List 2	190-250	50-60	24 dc	1.2	

**TABLE F**  
**CURRENT VALUES OF COMMONLY USED SIGNALS**

Signal		Milliamperes at Voltage Indicated (Voltage at Lamp or Signal)													
		Volts				Volts								Volts	
		7	11	16	20	4-1/2	10	14	20	24	26	28	75	110	
		60 Cycles				DC								20 Cycles	
Lamp	51A	35	42												
	G2	44	52												
	K2						24			35					
	A3						35			42					
Buzzer	7A			20	25			18			32	35			
	7C					140									
	7E			51	64		90		180						
	4C									20			16	23	
Bell	7A							19			35	38			
	7D					94									
	7E			51	64										
Ringer	4A												9* 4†	13* 6†	

*Note:* 1 milliampere = 0.001 amp

\* With capacitor

† Without capacitor