

**SB6613A POWER SUPPLY**

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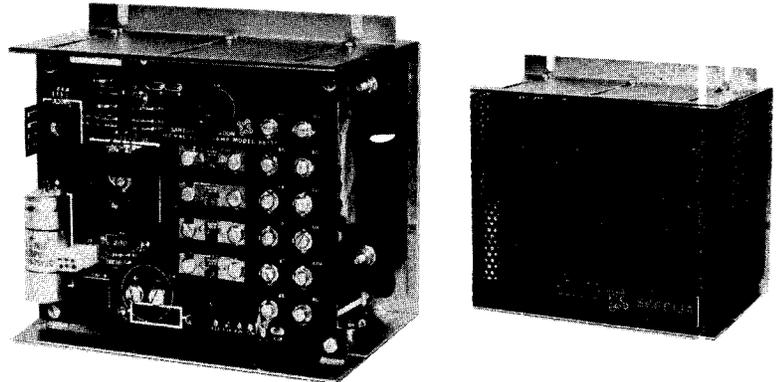


Figure 1 SB6613A Power Supply

**1. GENERAL**

1.1 This section provides a circuit description, installation and basic testing information for the San/Bar SB6613A Power Supply (Fig. 1). The SB6613A is designed for use in the San/Bar 6615A KTS with up to 29 lines. SB6613A is also compatible with all types of key telephone systems working in conjunction with central office or PBX/PABX equipment. The SB6613A can also be wall mounted.

The SB6613A includes a 105V, 30 HZ Ringing Generator which mounts inside the unit and it interfaces via a keyed connector assembly. The SB6613A-1 is without Ringing Generator. The Ringing Generator (SB6613-200) may be ordered separately.

The Power Supply and Ringing Generator are designed to meet U.L. requirements and have been submitted for registration.

**2. SPECIFICATIONS**

- 2.1 List of applicable drawings:
- a Equipment Drawing ED-6613-100 (Fig. 2)
  - b Schematic Drawing: SD-6613-000 (Fig. 3)
  - c Equipment Drawing: ED-6613-000 (Fig. 4)
  - d Ringing Generator Assembly ED-6613-200 (Fig. 5)

**2.2 Electrical Characteristics:**

2.2.1 Input Voltage: 103-127 VAC, 60 Hz

2.2.2 Output Voltages:

- a 10 VAC  $\pm$  1V at 4 AMPS continuous or 8 AMPS intermittent current lamp supply.
- b 20 VAC  $\pm$  2V at 1.5 AMPS maximum continuous current buzzer supply.
- c 20-26 VDC signal battery at 2 AMPS maximum continuous current. Maximum ripple voltage at full load: 1.0 VRMS.
- d 24 VDC  $\pm$  1V at .7 AMPS continuous current for talk battery. Maximum ripple at full load: 10 MV RMS  
Load Regulation: Less than 2% output variation over full line/load range.
- e 105 VAC, 30 Hz at 50 MA ringing supply.

2.2.3 Input Protection: 2 AMP fuse

2.2.4 Output Protection:

- a 10 VAC output: Two 5A fuses
- b 20 VAC output: One 2A fuse
- c Signal Battery: One 2A fuse
- d Talk Battery: Monolithic voltage regulator is inherently short-circuit proof.
- e Ringing Generator: Self limiting

2.2.5 Operating Environment: Temperature from 0°c to 50°c. Humidity to 90%

## 2.2.6 Physical Characteristics:

### a Dimensions:

Overall Size 7" H x 6<sup>7</sup>/<sub>8</sub>" W x 5<sup>1</sup>/<sub>2</sub>" D  
Mounting Depth (frontside):  
Adjustable from 3<sup>3</sup>/<sub>8</sub>" to a maximum  
of 5<sup>7</sup>/<sub>8</sub>".

### b Weight: 11 lb. 15 oz.

## 3. INSPECTION

- 3.1 Inspect the unit thoroughly, as soon as possible after delivery. If any part of the unit has been damaged in transit, report the extent of damage to the transportation company immediately. If the unit is to be stored for some time before installation, make an operational check at once. The purpose of this check is to make sure that there is no damage as a result of shipping. If the check indicates satisfactory performance the unit may be stored for the future installation.

## 4. MOUNTING

- 4.1 Standard 6<sup>1</sup>/<sub>2</sub>" Western Electric vertical mounting centers. The overall mounting width is 6<sup>7</sup>/<sub>8</sub>".
- 4.2 The unit can also be mounted directly on the back board. Loosen the screws that secure the two mounting brackets and slide the brackets back for wall mounting. Secure to the wall with appropriate mounting hardware (not provided).
- 4.3 Cover Mounting:  
The cover is secured on the unit via the indentations on the sides. To mount the cover, simply push the cover onto the unit until it snaps into place.
- 4.4 Ringing Generator Mounting: The Ringing Generator mounts inside the SB6613A and is secured in place by 4 mounting standoffs (hardware supplied with unit). Merely mount, as shown in Fig. 5 and plug in connector at Location J2.

## 5. INSTALLATION

- 5.1 Installer connections on the SB6613A Power Supply can easily be made according to the table below. All terminations are Via #6 screw terminals (see Fig. 2). Route wires through cut-out provided in the cover.

FUNCTION	TERMINAL
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Lamp Supply:	
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10 VAC	LB
10 VAC	LB
10 VAC (GND)	LG
10 VAC (GND)	LG

Buzzer Supply:	
----------------	--

20 VAC	BZ
20 VAC (GND)	BZG

Signal Battery:	
-----------------	--

- 24 ± 3 VDC	BB
- 24 VDC (GND)	BG

Talk Battery:	
---------------	--

- 24 VDC	AB
- 24 VDC (GND)	AG

- 5.2 Each of the above outputs has a separate ground; however, it is a good practice for protection to tie all grounds together and connect to a good earth ground. A ground lug is provided for this purpose (see Fig. 4).

## 6. CIRCUIT DESCRIPTION

See schematic drawing: SD-6613-000A as shown in Fig. 3.

- 6.1 The Power Supply outputs are generated as follows:
- The 10 and 20 VAC are provided for by the appropriate taps on the transformer windings.
  - The 20-26 VDC is provided for by using a bridge full wave rectifier CR6 in conjunction with a capacitor filter C4 and shunt resistor R5 on a 19 VAC tap.
  - The 24 Volt Talk Battery is provided for first by rectifying the AC voltage via diodes CR1-CR4 and filter capacitor C1, then the circuit of Q1, Q2, and CR5 is used as preregulator to reduce the voltage present at the input of the voltage regulator VR1 (and also to dissipate parts of the power through Q2). Finally the regulated output of 24 VDC ± 1V is made available at the terminals AG and AB.
  - Input circuitry is protected from over load by a fuse. All outputs are also protected by fuses. (Output of Talk Battery is protected internally

by the regulator chip VR1 against short circuit).

6.2 The ringing voltage is generated as follows: AC line voltage appears across the split primary windings and associated network of T2. Because of the diode CR7, much more current flows in one direction than the other, causing the secondary voltage to have a heavy 30 Hz component. Capacitor C5 and the secondary winding are resonant at 30 Hz so that the output voltage across T2-4 and T2-3 will be an approximate line wave, with a fundamental frequency of 30 Hz.

7. TESTING

7.1 If trouble is encountered with the operation of the SB6613A Power Supply, check that all installer connections have been properly made. Visually inspect terminals for broken wires and check the input and all the output fuses.

7.2 If trouble persists, use a multimeter, remove all installer connections, and test SB6613A as follows:

a Connect the multimeter (set to 150 VAC scale) across E27 and E28

terminals on the PCB. The multimeter should indicate approximately the required input AC voltage.

b Connect the multimeter (set to 30 VAC scale) across output terminals LB and LG. The multimeter should indicate 10 VAC ± 1V.

c Connect the multimeter (set to 30 VAC scale) across output terminals BZ and BZG. The multimeter should indicate 20 VAC ± 2V.

d Connect the multimeter (set to 30 VDC scale) across terminals BG and BB. The multimeter should indicate 20 to 26 VDC.

e Connect the multimeter (set to 30 VDC scale) across terminals AG and AB. The multimeter should indicate 24 VDC ± 1V.

7.3 Field repairs involving replacement of components within an assembly are not recommended. The SB6613A Power Supply has a two (2) year warranty. Return to San/Bar Corporation, 17422 Pullman Street, Santa Ana, California 92711. For technical assistance, call (714) 546-6500.

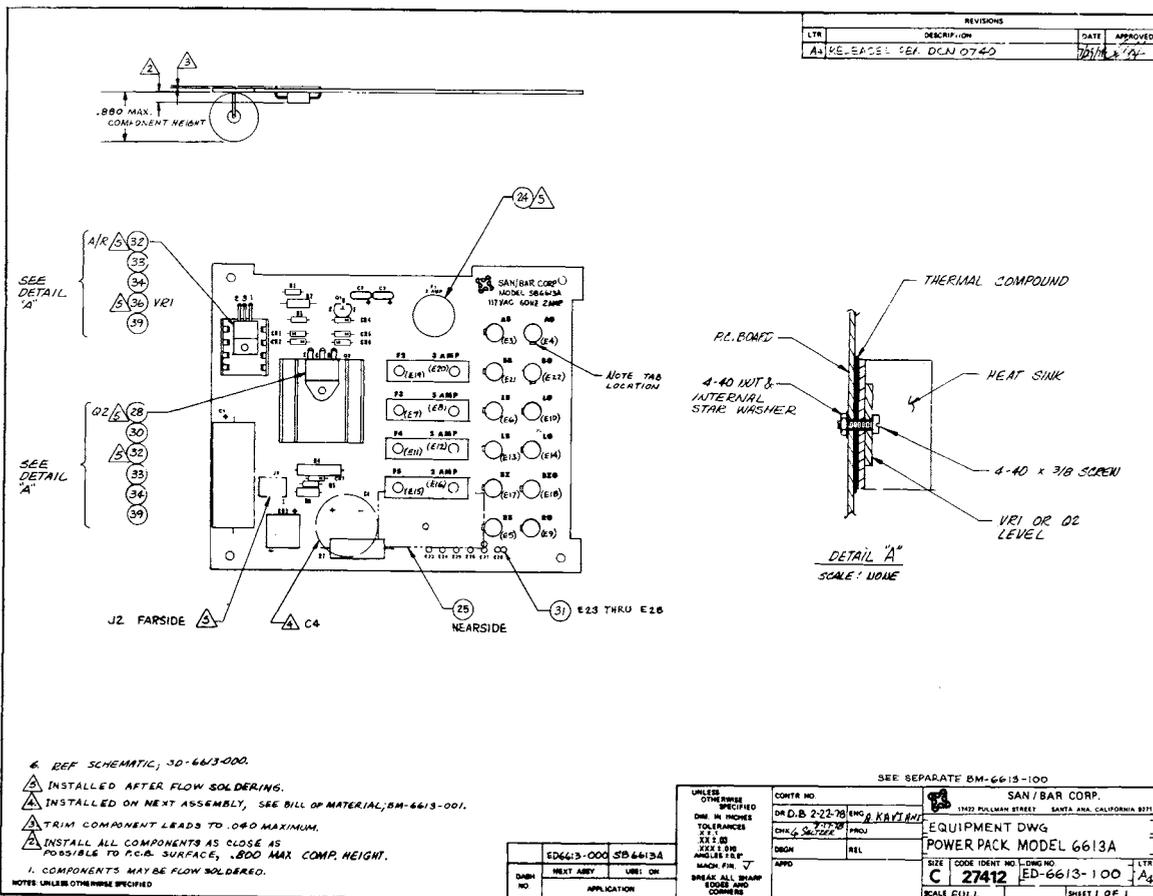
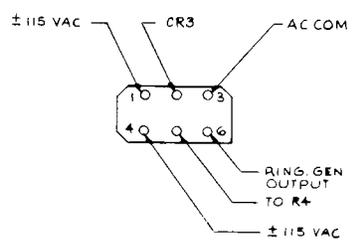
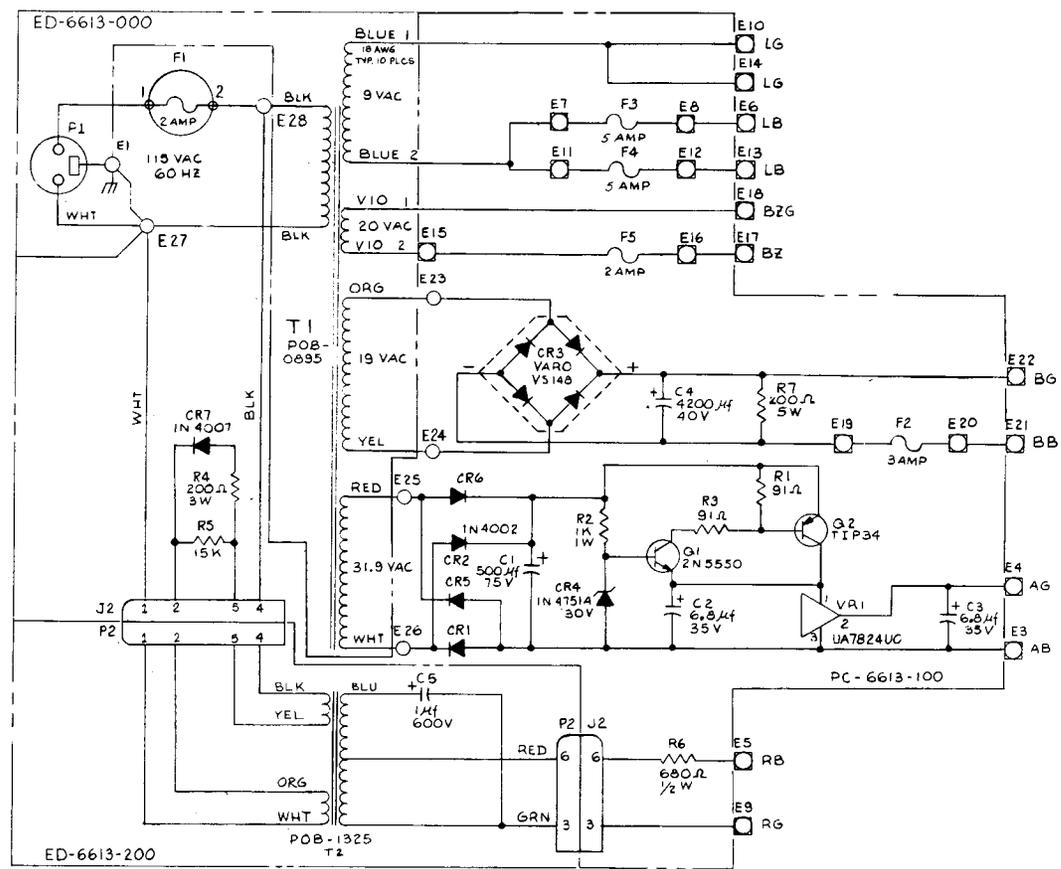


Figure 2

REVISIONS				DATE	APPROVED
SHT	ZONE	LTR	DESCRIPTION		
		A <sub>2</sub>	RELEASED PER DCN 0740		



6. ALL 'E' POINTS DESIGNATED ARE SOLDER CONTACTS.
  5. ALL 'E' POINTS DESIGNATED ARE TERM. LUGS.
  4. RESISTORS 1/4 W ± 5%
  3. DIODES ARE 1N4002
  2. INSTALL WIRE PER WIRE LIST WL-6613-000
  1. ALL PARTS ASSEMBLED TO ED-6613-000
- NOTE: UNLESS OTHERWISE SPECIFIED.

DASH NO.		NEXT ASSY USED ON		APPLICATION	
ED-6613-000	SD-6613A				

UNLESS OTHERWISE SPECIFIED		CONTR. NO.		SEE SEPARATE BM -	
DIM. IN INCHES	TOLERANCES	DR OYNEBBAATEN 11-14-77	CHK	SAN / BAR CORP.	
XX ± 0.15	XXX ± 0.10			17423 Pullman Street - Santa Ana, Calif. 92705	
ANGLES ± 0.5°	MACH. FIN.			SCHEMATIC 6613A	
				60HZ POWER SUPPLY	
				REL	
				APPD	
				APPD	

SIZE	CODE IDENT NO.	DWG NO.	LTR
D	27412	SD-6613-000	A <sub>2</sub>

SCALE ~ SHEET 1 OF 1

