

POWER SYSTEMS
RINGING CIRCUIT
RINGING & TONE SUPPLY
756A PEX
J86464D

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

- D.1 The 0.13 meg KS-13491 L1 Resistor is
now part of V Option.

BELL TELEPHONE LABORATORIES, INCORPORATED

Dept. 6261-PJH-AFB-TLK

POWER SYSTEMS
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756A PBX
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CHANGES

B. CHANGES IN APPARATUS

B.1	Superseded	Superseded By
	107C Frequency Generator, W Option	107D Frequency Generator, V Option

D. DESCRIPTION OF CIRCUIT CHANGES

- D.1 The Mfr Disc. 107C frequency generator (W option) is superseded by the 107D frequency generator (V option).
- D.2 Circuit Notes 102 and 103, and the Figures and Options table are revised to reflect this change.
- D.3 In CD Section 5, reference to the 107D frequency generator (RING G) shall be added.

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DEPT. 6261-PJH-AFB-LU

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CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 The 107B (Ring G) frequency generator has been replaced by the 107C frequency in order to provide increased output when tie trunks are used with the 756A PBX.

B. CHANGES IN APPARATUS

B.1 In Fig. 1 the 107C frequency generator (Ring G) has been added as "W" option.

B.2 The value of resistor (R1) has been changed from 0.24 Meg, "X" option, to 0.13 Meg. "W" option in Fig. 1.

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLYING TO ADDED OR REMOVED APPARATUS

C.1 In CD Section 2.2 "75 to 90 volts" is changed to read "65 to 90 volts".

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 In Fig. 1 (Ring G) "W" option 107C frequency generator has been added.

D.2 In Fig. 1 the value of resistance (R1) has been changed from 0.24 Meg. to 0.13 Meg.

D.3 Note 203 has been added.

D.4 In CD Section 5, reference to the 107C frequency generator is added.

All other headings under Changes, no change.

1. PURPOSE OF CIRCUIT

1.1 To provide 20 cycle ringing current and dial and busy tones for the 756A PBX.

2. WORKING LIMITS

2.1 105-125 Volts, 60 Cycle, AC Power Service.

2.2 65-90 Volts, 20 Cycle Ringing output.

3. FUNCTIONS

3.1 To convert 60 cycles AC to 20 cycle ringing current.

3.2 To convert 60 cycles AC to 600 cycles modulated at 120 cycles for low tone.

4. CONNECTING CIRCUITS

4.1 Power Supply Circuit 756A PBX - SD-81326-01.

4.2 Ringing Circuit-Interrupter Equipment - SD-81288-01.

DESCRIPTION OF OPERATION

5. RINGING SUPPLY

The (RING G) 107B or 107C frequency generator in Fig. 1 converts 60 cycle power to 20 cycles at about 90 volts. Its output, while containing some higher harmonics, is essentially inaudible. The generator is connected to the load through a parallel circuit consisting of (C1) and (L2). This circuit resonates at about 460 cycles per second and is shock excited periodically so that a 460 cycle voltage modulated at 40 cycles appears across it and is fed to the load.

The shock exciting energy comes from current pulses due to the abrupt drop in voltage (about 27 volts) across the starter gap of the (V1) gas tube each time the tube fires. The current through the tube is controlled by a series circuit consisting of (L3), and (C2), and also by resistor (R1) in a parallel circuit. (L2) and (L3) are electrically and magnetically independent of each other. (L2) is $0.230 \pm 1\%$ henries, and (L3) is $2.27 \pm 5\%$ henries.

With these circuit constants (V1) fires twice on each positive half cycle and twice on each negative half cycle, thus supplying two pulses per half cycle properly spaced for shock exciting the tuned circuit. This produces a pleasing tone with an approximately sinusoidal modulation envelope.

6. LOW TONE SUPPLY

The (LT) 101A frequency generator in Fig. 1 converts 60 cycle power to 600 cycles modulated at 120 cycles for furnishing low tones. The (LT2) output is stepped down by the (L1) induction coil and resistors (R1) and (R2) to approximately 1/2 volt for dial tone. The (LT1) output is approximately 2 volts and is interrupted at 60 ipm to provide busy tone, and at 120 ipm to provide recall tone.

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