

POWER SYSTEMS  
755A P.B.X. PLANT  
CHARGE AND DISCHARGE CIRCUIT  
WITH RELAY FOR CHARGE CONTROL

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The B52 lead in Fig. 1 designated "To Fig. 5" formerly terminated on the bus bar instead of on the "Bat." fuse.

D.2 Figs. 56 and notes 206 and 207 were not formerly shown and

Figs 4 and 55 were not Mfr. Disc.

D.3 Note 205 reworded to clarify, previously read "When Fig. 5 is specified remove Fuses (CHG) and (GC) in Fig. 1."

All other headings, no change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 5740-LDF-JMD-ZO

TO BE USED AS AN ORIGINAL  
BY THE HAWTHORNE PRINT SHOP

POWER SYSTEMS  
755A P.B.X. PLANT  
CHARGE AND DISCHARGE CIRCUIT  
WITH RELAY FOR CHARGE CONTROL

CHANGES

B. CHANGES IN APPARATUS

- B.1 (CT) U405 relay rated "Mfg. Disc."  
replaced by U1244 relay.

D. DESCRIPTION OF CIRCUIT CHANGES

- D.1 Prior to issue 11-D "Z" and "W"  
option for (CT) relay was not  
shown. "Z" option rated "Mfg. Disc."

- D.2 Test requirements for (CT). "W"  
option relay added to circuit  
requirement table.

- D.3 Note 101 added.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 3250-RRG-JMD

POWER SYSTEMS  
755A, P.B.X. PLANT  
CHARGE AND DISCHARGE CIRCUIT  
WITH RELAY FOR CHARGE CONTROL

CHANGES

A. CHANGED AND ADDED FUNCTIONS

- A.1 Provision for battery supply from building batteries added.

D. DESCRIPTION OF CIRCUIT CHANGES

- D.1 Figs. 5 and 55 added.  
D.2 Notes 203, 204 and 205 added.  
D.3 Fig. 1A was shown as part of Fig. 1.  
D.4 Fig. 51 was designated Fig. 1K.  
D.5 Test No. 1 read as follows:

Remove (CHg) Fuse. With 35C Test Set connect battery or ring on "Test Bat and Grd" Jack to term. 49. Connect tip on "Tip and Ring" jack to 1T (CT). Connect voltmeter across coil terminals "R" and "L" of (CC). Adjust in accordance with BSP.

All other headings under Changes, No Change.

1. PURPOSE OF CIRCUIT

- 1.1 Provides battery current for operating the 755A P.B.X.

2. WORKING LIMITS

- 2.1 18-25 Volts.

3. FUNCTIONS

- 3.1 To charge a battery from central office cable conductors or with a copper oxide rectifier.  
3.2 To automatically maintain the amount of charge in the battery by reducing the charge current when the voltage increases to a definite amount.

3.3 To operate an alarm in ease of fuse failures.

3.4 To supply battery to the P.B.X. from building batteries

#### 4. CONNECTING CIRCUITS

4.1 Alarm, trunk, and link circuits.

#### 5. DESCRIPTION OF OPERATION

##### 5.1 Charging Equipment

The battery is arranged for charging either from central office battery over cable pairs or from a local rectifier.

The charging current is delivered to the battery at two different rates under the control of the (CC) relay. With this relay operated the battery is charged at a low rate through resistance (R1) and with relay (CC) non-operated, resistance (r1) is short-circuited and a high rate of charge is delivered to the battery. The (CC) relay remains non-operated until the battery is charged and remains operated until it is released by the operation of the (CT) relay which operates whenever a trunk or link circuit is off normal or when a fuse is blown.

##### 5.2 Method of Adjustment

###### 5.21 Cable Pair Charging

With cable pair charging, the resistance (R2) should be adjusted so that this resistance together with the cable pair resistance will be between 60 and 80 ohms. This will provide charge current within the limits of 0.5 amp. and 0.35 amp. with a variation of 48-50 volts in the central office battery and with relay (CC) not operated. Resistance (R1) should be adjusted to 200 ohms which will provide a nominal trickle charge current of 0.1 amp. with relay (CC) operated.

###### 5.22 Local Charger

Resistance (R2) should be strapped out and resistance (R1) adjusted to 75 ohms. With relay (CT) blocked operated, the local charger should be adjusted for approximately 0.425 amperes. With relay (CT) blocked non-operated and relay (CC) operated (manually if necessary) the resistance (R1) should be increased or decreased if necessary to provide approximately 0.1 amperes. If a local ringing machine is used, terminals 3 and 4 of (CT) relay should be strapped together when this relay is blocked non-operated.

###### 5.23 Cable Pairs from Building Batteries

Sufficient cable pairs should be provided to maintain the voltage within the working limits.

### 5.3 Local Ringing Machine

When a local ringing machine is required, the battery for operating the relay in the ringing machine circuit is provided through the contacts of the (CT) relay.

### 5.4 Fuse for Exposed Central Offices Features

When the central office cable pairs used for charging are exposed, the installer should provide the 1.25 ampere 60E fuse shown in figures 3 and 4 in addition to the standard protector blocks and fuses outside of the P.B.X. cabinet. The 60E fuse provides protection required in the case of an accidental high voltage on the cable pairs.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 331

MAF) GK  
AEP)