

CIRCUIT DESCRIPTION
SYSTEMS DEVELOPMENT DEPARTMENT
PRINTED IN U.S.A.

CD-80225-01
Issue 1
Appendix 8-D
November 13, 1951
(2 Pages) Page 1

POWER SYSTEMS
CHARGE AND DISCHARGE CIRCUIT
750-A P.B.X. POWER PLANTS
ARRANGED FOR CHARGING OVER CABLE PAIRS
OR BY COPPER OXIDE RECTIFIER

CHANGES

A. CHANGED AND ADDED FUNCTIONS

- A.1 The rating is changed from "A.T.&T. Std." to
"Mfr. Disc."

B. CHANGES IN APPARATUS

- B.1 None.

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

- C.1 Leads BB and PG are changed from 20BHE to 22DSOU.

D. DESCRIPTION OF CIRCUIT CHANGES

- D.1 None.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

- 1.1 No change.

2. WORKING LIMITS

- 2.1 No change.

OPERATION

3. FUNCTIONS

- 3.1 No change.

4. CONNECTING CIRCUITS

- 4.1 No change.

DETAILED DESCRIPTION

5. No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 331

CDW)
HLM) BD

CIRCUIT DESCRIPTION
SYSTEMS DEVELOPMENT DEPARTMENT
PRINTED IN U.S.A.

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Issue 1
Appendix 7-D
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POWER SYSTEMS
CHARGE AND DISCHARGE CIRCUIT
750-A P.B.X. POWER PLANTS
ARRANGED FOR CHARGING OVER CABLE PAIRS
OR BY COPPER OXIDE RECTIFIER

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 None.

B. CHANGES IN APPARATUS

B.1 Battery designated changed from BI-S to BI-5.

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

C.1 None.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 None.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

OPERATION

3. FUNCTIONS

3.1 No change.

4. CONNECTING CIRCUITS

4.1 No change.

DETAILED DESCRIPTION

5. No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 331

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CIRCUIT DESCRIPTION
SYSTEMS DEVELOPMENT DEPARTMENT
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Issue 1
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POWER SYSTEMS
CHARGE AND DISCHARGE CIRCUIT
750-A P.B.X. POWER SYSTEMS
ARRANGED FOR CHARGING OVER CABLE PAIRS
OR BY COPPER OXIDE RECTIFIER

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 None.

B. CHANGES IN APPARATUS

B.1 Batteries are changed from Willard SYRG-S-2 to
Exide BI-5.

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

C.1 None.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 None.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

OPERATION

3. FUNCTIONS

3.1 No change.

4. CONNECTING CIRCUITS

4.1 No change.

DETAILED DESCRIPTION

5. No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 331

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CIRCUIT DESCRIPTION
SYSTEMS DEVELOPMENT DEPARTMENT
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CD-80223-01
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POWER SYSTEMS
CHARGE AND DISCHARGE CIRCUIT
750-A P.B.X. POWER SYSTEMS
ARRANGED FOR CABLE PAIR CHARGING
OR A RECTOX RECTIFIER

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 None.

B. CHANGES IN APPARATUS

B.1 None.

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

C.1 None.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Cable pair charging leads to central office,
heading for Fig. 3, was lowered to make room for
title 750-A P.B.X. charge and discharge circuit
which was added.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

OPERATION

3. FUNCTIONS

3.1 No change.

4. CONNECTING CIRCUITS

4.1 No change.

DETAILED DESCRIPTION

5. No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 331

EFK)
FTM) BD

CIRCUIT DESCRIPTION
SYSTEMS DEVELOPMENT DEPARTMENT
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POWER SYSTEMS
CHARGE AND DISCHARGE CIRCUIT
750-A P.B.X. POWER PLANTS
ARRANGED FOR CABLE PAIR CHARGING
OR A RECTOX RECTIFIER

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 None.

B. CHANGES IN APPARATUS

B.1 None.

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

C.1 None.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Circuit was redrawn to put in standard handbook form.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

OPERATION

3. FUNCTIONS

3.1 No change.

4. CONNECTING CIRCUITS

4.1 No change.

DETAILED DESCRIPTION

5. No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 331

WSR)
HTL) BD

CIRCUIT DESCRIPTION
SYSTEMS DEVELOPMENT DEPARTMENT
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CD-80223-01
Issue 1
Appendix 3-D
September 7, 1929
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POWER SYSTEMS
CHARGE AND DISCHARGE CIRCUIT
750-A P.B.X. POWER PLANTS
ARRANGED FOR CABLE PAIR CHARGING
OR A RECTOX RECTIFIER

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 None.

B. CHANGES IN APPARATUS

B.1 Note at rectifier read "1/2 amp. Rectox rectifier per KS-5250 mounted on top of P.B.X. cabinet".

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

C.1 None.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 None.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

OPERATION

3. FUNCTIONS

3.1 No change.

4. CONNECTING CIRCUITS

4.1 No change.

DETAILED DESCRIPTION

5. No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 331

WJB)
HLM)BD

CIRCUIT DESCRIPTION
SYSTEMS DEVELOPMENT DEPARTMENT
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GD-80223-01
Issue 1
Appendix 2-D
April 29, 1929
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POWER SYSTEMS
CHARGE AND DISCHARGE CIRCUIT
750-A P.B.X. POWER PLANTS
ARRANGED FOR CABLE PAIR CHARGING
OR A RECTOX RECTIFIER

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 None.

B. CHANGES IN APPARATUS

B.1 None.

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

C.1 None.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Apparatus was rearranged to agree with the location of the equipment mounted in the P.B.X.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

OPERATION

3. FUNCTIONS

3.1 No change.

4. CONNECTING CIRCUITS

4.1 No change.

DETAILED DESCRIPTION

5. No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 331

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CIRCUIT DESCRIPTION
SYSTEMS DEVELOPMENT DEPARTMENT
PRINTED IN U.S.A.

CD-80223-01
Issue 1
Appendix 1-D
April 3, 1929
(2 Pages) Page 1

POWER SYSTEMS
CHARGE AND DISCHARGE CIRCUIT
750-A P.B.X. POWER PLANT
ARRANGED FOR CABLE PAIR CHARGING
OR A RECTOX RECTIFIER

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 None.

B. CHANGES IN APPARATUS

B.1 D.P.S.T. tumbler switch 91102 cutout and type "Z" conduit was shown in service leads to rectox rectifier. Fuses were shown in negative cable pair charge leads.

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

C.1 None.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Negative side of cable pair charging leads were shown connected to alarm type fuses instead of terminal punchings.

D.2 Fig. 1, 2 and 3 was shown as single figure with "X" and "Y" wiring cable pair and rectox charging respectively.

D.3 In service leads to Rectox charger a D.P.S.T. tumbler switch, 91102 cutout and type "Z" conduit were shown.

D.4 Note 5 was added.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

OPERATION

3. FUNCTIONS

3.1 No change.

4. CONNECTING CIRCUITS

4.1 No change.

DETAILED DESCRIPTION

5. No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 331

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CIRCUIT DESCRIPTION
SYSTEMS DEVELOPMENT DEPARTMENT
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CD-80223-01
Issue 1
February 25, 1929
(2 Pages) Page 1

POWER SYSTEMS
CHARGE AND DISCHARGE CIRCUIT
750-A PBX POWER PLANTS
ARRANGED FOR CABLE PAIR CHARGING
OR A RECTOX CHARGER

DEVELOPMENT

1. PURPOSE OF CIRCUIT

- 1.1 To provide means for charging a small PBX battery and means for regulating the rate of charge.
- 1.2 To provide fuse failure alarm.

2. WORKING LIMITS

- 2.1 15-21 volts unregulated.

OPERATION

3. FUNCTIONS

- 3.1 To charge the PBX battery off a nearby central office over cable conductors.
- 3.2 To charge the PBX battery with a Rectox charger where AC service is available.
- 3.3 To cause an alarm in the event of charge or discharge fuse failure.

4. CONNECTING CIRCUITS

- 4.1 Alarm Circuit.

DETAILED DESCRIPTION

- 5. Battery charging is accomplished either by means of cable conductors or a rectox charger. In either case a 50 ohm variable resistance and 2 fixed resistances of 200 ohms and 150 ohms the latter being tapped in units of 50 ohms and 100 ohms are furnished for purposes of regulating the rate of charge. Coarse variations are obtained by the fixed resistance and fine variation by means of the variable resistance. The resistances can and should be so adjusted that

the specific gravity of the battery will be the same every day at the same time, i.e. the charging rate should be sufficient to replace the daily drain plus internal losses of the battery.

6. ALARMS

- 6.1 The failure of a charge or discharge fuse causes an associated alarm type fuse to fail furnishing battery thru 200 ohms over the PG lead to the alarm circuit.
- 6.2 All cable conductors used as charging leads are protected at the PBX with alarm type fuses. The failure of one or more of these fuses furnishes battery thru 200 ohms over the PG lead to the alarm circuit.

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