

CIRCUIT DESCRIPTION

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CD-80929-01
ISSUE 8B
APPENDIX 2AC
DWG ISSUE 13AC

POWER SYSTEMS
500 TYPE PLANTS
POWER SUPPLY CIRCUIT
50VA, 0.25, 0.5, 0.75, AND 1.5 KVA
20 OR 22 VOLT A-C SUPPLY
506A PLANT

CHANGES

B. Changes in Apparatus

B.1 Superseded
FC jack, 245A, "T"
option-FIG. 7

Superseded By
FC jack, 245C, "S" option-
FIG. 7

D. Description of Changes

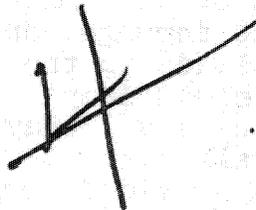
- D.1 FC jack was changed to eliminate interference with adjacent jack.
- D.2 The "T" option was rated Mfr Disc. and superseded by the "S" option (AT&T Co. Std.).
- D.3 Note 120 added.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5142-EAR-DHS-EAF

CIRCUIT DESCRIPTION

CD-80929-01
ISSUE 8B
APPENDIX 1AC
DWG ISSUE 12AC



POWER SYSTEMS
500 TYPE PLANTS
POWER SUPPLY CIRCUIT
50VA, 0.25, 0.5, 0.75, AND 1.5 KVA
20 OR 22 VOLT A-C SUPPLY
506A PLANT

CHANGES

A. Changed and Added Functions

A.1 To provide compatability with No. 1 ESS INWATS offices.

B. Changes in Apparatus

B.1 Added

Fig. 6 and 7

D. Description of Changes

D.1 Figures 6 and 7 were added to be used, instead of Figures 2A and 3, with No. 1 ESS INWATS service.

D.2 Note 119 was added to describe the application of Figures 6 and 7.

F. Changes in Description of Operation

F.1 Add 1.09 and 1.10 to SECTION II - DETAILED DESCRIPTION:

For No. 1 ESS INWATS offices

1.09 Fig. 6 shows the circuit for the fuse panel. A protective resistance, a fuse alarm lamp and a full wave bridge rectifier are individual to the fuse panel. When a fuse blows, direct current is supplied to the FA relay, bringing in the office visible and audible alarms. The FC jack permits disconnecting FA relay from the F diode for testing. It also connects a load across the F diode to prevent injury to it in the event that a fuse blows while the FA relay is under test.

1.10 Fig. 7 shows a no-voltage alarm and fuse alarm. The VA relay is normally operated, being supplied with direct current by means of the NV diode. If power fails this VA relay releases, lights the NVA lamp on the alarm panel and brings in the office visible and audible alarms. The operation of the ALM CO key operates the VG relay which locks up through contacts of the VA relay, disconnects the leads to the central office alarm circuit, and lights NVG lamp on the alarm panel. When the power returns VA relay operates releasing VG relay, and the alarm circuit is in normal condition. The VC jack is provided for testing VA relay and removes the relay winding from NV diode. This VC jack also removes the NV diode from the alarm bar to prevent injury when the load is removed.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5152-FPZ-DHS-SPF

POWER SYSTEMS
500 TYPE PLANTS
POWER SUPPLY CIRCUIT
50VA, 0.25, 0.5, 0.75, AND 1.5 KVA
20 OR 22 VOLT A-C SUPPLY
506A PLANT

SECTION I - GENERAL DESCRIPTION1. PURPOSE OF CIRCUIT

1.01 To provide nominal 20 or 22V 60-cycle supply for operation of calculagraphs, clocks, timers, etc. See Table A on drawing SD-80929-01 for actual voltage range from each transformer.

SECTION II - DETAILED DESCRIPTION1. DESCRIPTION OF OPERATIONGeneral

1.01 In Fig. 1, it shows the circuit for the 0.25-, 0.50-, 0.75-, and 1.5-kVA unregulated transformers. Fig. A, B, or C is used with Fig. 1.

1.02 In Fig. 4, it shows the 50 VA transformer.

For Offices Other Than No. 5 Crossbar

1.03 In Fig. 2A, it shows the circuit for the first fuse panel, while Fig. 2B or 2D shows the circuit for succeeding fuse panels. A protective resistance and fuse alarm varistor are individual to the fuse panel. When a fuse blows, direct current is supplied to the FA relay, bringing in the office visible and audible alarm. The FC jack permits disconnecting FA relay from the F varistor for testing. It also connects a load across the F varistor to prevent injury to it in the event that a fuse blows while the FA relay is under test.

1.04 Fig. 3 shows a no-voltage alarm and fuse alarm. The VA relay is normally operated, being supplied with direct current by means of the NV varistor. If power fails this VA relay falls back, lights the NVA lamp on the alarm panel and brings in the office visible and audible alarm. The operation of the ALM CO key operates the VG relay which locks up through contacts of the VA relay, disconnects the leads to the central office alarm circuit, and lights NVG lamp on the alarm panel. When the power returns VA relay operates releasing VG relay, and the alarm circuit is in normal condition. The VG jack is provided for testing VA relay and removes the relay winding from NV varistor. This VC jack also removes the NV varistor from the alarm bar to prevent injury when the load is removed.

For No. 5 Crossbar Offices

1.05 Fig. 2C shows the fuse panel circuit. This circuit operates as a fuse alarm circuit by applying battery to the 60-cycle bar when a 60-cycle fuse blows (V option). This battery circuit is completed through the transformer winding to ground and blows the 0.18A fuse which brings in the fuse alarm.

1.06 When U option is furnished, the blowing of a 60-cycle fuse completes a circuit through the transformer to operate a fuse alarm relay.

1.07 Fig. 5A shows the fuse alarm relay which is energized over the "AB" lead from Fig. 2C. Operation of this relay lights FA alarm lamp and places battery on the "MJ" lead to the alarm system.

1.08 Fig. 5 is a no-voltage alarm circuit. The VA relay is normally operated by direct current from the NV varistor. If power fails this VA relay releases, lights the NVA lamp on the alarm panel and brings in the office alarm. The operation of the ALM CO key operates VG relay which locks up through contacts of VA relay, disconnects the leads to the central office alarm circuit, and lights NVG lamp on the alarm panel. When power returns, VA relay operates releasing VG relay, and the alarm circuit is in normal condition. The VC jack is provided for testing VA relay and removes the relay winding from NV varistor. This VC jack also removes the NV varistor from the alarm bar to prevent injury when the load is removed.

SECTION III - REFERENCE DATA1. WORKING LIMITS

1.01 Input:

105 to 129V or 210 to 258V

1.02 Output:

See Table A on drawing SD-80929-01.

2. FUNCTIONAL DESIGNATIONS

None.

3. FUNCTIONS

3.01 This power supply is designed to perform the following functions:

- (a) To transform nominal 120 or 240V to nominal 20 or 22V.
- (b) To provide alarm when supply fails or when distribution fuse blows.

4. CONNECTING CIRCUITS

4.01 This circuit is designed to function with the following circuits:

- (a) SD-25574-01 - Miscellaneous Circuit
- (b) SD-27542-01 - Connecting Circuit Visual and Audible Alarm Circuit

SECTION IV - REASONS FOR REISSUE

CHANGES

A. Changed and Added Functions

A.1 Added Fig. 5A to provide local fuse alarm.

B. Changes in Apparatus

B.1 Added

Fig. 5A

D. Description of Changes

D.1 Changed title to read: "20 or 22 Volt A-C Supply."

D.2 The text of the CD was brought up to date.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5152-WHM-DHS-EAA