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ELECTRONIC SWITCHING SYSTEMS NO. 2

ARRANGED WITH 2-WIRE FEATURES PROCESSOR

DC POWER DISTRIBUTION CIRCUIT

FOR USE WITH NO. 2B

CHANGES

D. Description of Changes

D.1 Changed FS 6 to FS 7 in Circuit Notes 105 and 106.

D.2 Changed No. 2 ESS to No. 2/2B ESS in Equipment Note 202. Added an additional pair required for growth.

D.3 Deleted Equipment Note 203(A) and replaced it with a new note.

D.4 Deleted Equipment Note 203(B) and replaced it with a new note.

D.5 Added "ESS" before equipment in Equipment Note 203(C)(2).

D.6 Deleted "conduit, armored cable, etc." and changed "they" to "it" in Equipment Note 203(D).

D.7 Changed ED-1A200-10 to ED-2H190-01.

D.8 Revised dc power distribution to show PD2 and PD3, when required.

D.9 Added Equipment Note 203(F).

D.10 Revised table of frame power feeders, filters, and current drains.

D.11 Added notes to table of frame power feeders and filters.

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DEPT 5331-FGH-RKE

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ELECTRONIC SWITCHING SYSTEMS

NO. 2
ARRANGED WITH 2-WIRE FEATURES

PROCESSOR
DC POWER DISTRIBUTION
CIRCUIT
FOR USE WITH NO. 2B

CHANGES

D. Description of Changes

D.1 Drawing changes only were made to feeder sizes shown in FS 5, 6, and 7.

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DEPT 5343-JHJ-MTS

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APPENDIX 1A
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ELECTRONIC SWITCHING SYSTEMS

NO. 2
ARRANGED WITH 2-WIRE FEATURES

PROCESSOR
DC POWER DISTRIBUTION
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CHANGES

D. Description of Changes

D.1. Changed Equipment Note 207 where current drain numbers, feeder, and fuse sizes were changed.

D.2. Added subscript to Equipment Note 207 to clarify method of fusing partially-equipped SMS frame.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5343-JHJ-MTS

ELECTRONIC SWITCHING SYSTEMS

NO. 2

ARRANGED WITH 2-WIRE FEATURES

PROCESSOR
DC POWER DISTRIBUTION
CIRCUIT

FOR USE WITH NO. 2B

SECTION I - GENERAL DESCRIPTION

1. PURPOSE OF CIRCUIT

1.01 This circuit distributes the +24 and -48 volt dc power to the No. 2B ESS processor.

1.02 The processor is a group of specially designed frames whose function is to provide a common control for the No. 2B ESS.

2. GENERAL DESCRIPTION OF OPERATION

2.01 The No. 2B ESS processor is one lineup consisting of one maintenance frame, one processor frame, and a pair of optional supplementary main store frames.

2.02 The processor lineup requires +24 volt and -48 volt power and ground from the power distributing frames. The processor frame is a double bay frame containing duplicated equipment in each bay. Equipment in bay 0 receives power from one even-numbered power distributing frame, while bay 1 receives power from an odd-numbered power distributing frame. The supplementary main store frames are single bay frames each containing one or two main store units. The supplementary main store frames are also separately powered from individual odd- and even-numbered power distributing frames. The maintenance frame receives power from both power distributing frames.

SECTION II - DETAILED DESCRIPTION

1. DESCRIPTION OF OPERATION

1.01 FS 1, FS 2, and FS 3 show the battery and ground feeders run from the power plant to the power distributing frames and to common systems equipment.

1.02 FS 2 through FS 7 show battery (+24 and -48 volt) and ground, double or triple feeders, run from the power distributing frames to the No. 2B ESS processor frames.

1.03 Equipment Note 208 shows battery and ground feeder sizes, current drains, filter types, voltage drops through filters and feeders, maximum current per frame, and limiting loop lengths (battery and ground conductor feet).

1.04 Information Note 208 contains the information required to calculate the feeder sizes when the loop distance exceeds the allowable 175-foot loop between the power distributing frame and any equipment frame in the processor, or when the voltage drop exceeds the 1 volt allowable for +24 volt and -48 volt power distribution.

1.05 Equipment Note 209 shows the types of filters used on the various equipment frames.

SECTION III - REFERENCE DATA

1. WORKING LIMITS

1.01 Voltage limits at the input to each power distributing frame from the power plant are as follows.

-48 volt system: -43.75 to -52.50 volts

+24 volt system: +21.75 to +26.25 volts

1.02 Voltage limits at the input to each equipment frame in the processor from the power distributing frames are as follows.

-48 volt system: -42.75 to -51.50 volts

+24 volt system: +20.75 to +25.25 volts

1.03 The maximum allowable voltage drop from the power distributing frame to the equipment frame fuse panel is 1 volt. This includes the voltage drop in the conductors and filter of the frame being supplied.

2. FUNCTIONAL DESIGNATIONS

2.01 None.

3. FUNCTIONS

3.01 This power distribution network provides dc power to the various equipment frames within the processor. The filters, provided in the power distribution frame and other frames, minimize interaction between frame circuits due to transient noise in the power feeders by which they are interconnected.

4. CONNECTING CIRCUITS

4.01 When this circuit is listed on a keysheet, the connecting information thereon is to be followed.

(a) Power Distributing Frame Circuit - SD-1A126-01, SD-1A126-02, or SD-1A126-03.

(b) Electronic Switching Systems No. 2, arranged with 2-wire Features, +24 and -48 volt DC Power Distribution - SD-2H084-01.

(c) Electronic Switching Systems No. 2, AC Power Distribution Circuit - SD-2H085-01.

(d) Maintenance Frame Circuit - SD-2H190-01.

(e) Processor Frame Circuit - SD-2H300-01.

(f) Supplementary Main Store Frame Circuit - SD-2H302-01.

(g) Charge and Discharge Circuit +24 volt) 111A Power Plant - SD-81612-01.

(h) Charge and Discharge Circuit (-48 volt) 111A Power Plant - SD-81613-01.

5. MANUFACTURING TESTING REQUIREMENTS

Intermediate Requirements

5.01 None.

End Requirements

5.02 This circuit should be tested to verify that it is wired in accordance with the schematic and wiring drawings, that th requirements of the circuit requirements table are met, and that the circuit is capable of performing all functions stated in this circuit description.

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