

CIRCUIT DESCRIPTION

CD-3H901-01
ISSUE 2A
APPENDIX 2A
DWG ISSUE 4A
DISTN CODE 1T11

ELECTRONIC SWITCHING SYSTEMS

NO. 3

NETWORK FRAME
CIRCUIT

CHANGES

D. Description of Changes

D.1 The 943AN connectors are replaced by 943BG connectors in order to break the ground loop between battery boost circuits. This is reflected in Equipment Note 202.

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DEPT 5333-WLH-GH

CIRCUIT DESCRIPTION

CD-3H901-01
ISSUE 2A
APPENDIX 1A
DWG ISSUE 3A
DISTN CODE 1T11

ELECTRONIC SWITCHING SYSTEMS

NO. 3

NETWORK FRAME
CIRCUIT

CHANGES

B. Changes in Apparatus

B.1 Added 24 533B diodes.

D. Description of Changes

D.1 Diodes were added to cable assembly CA02 to break up the input node multiple and to confine the effects of a cross between the tip/ring path and the pulse path.

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DEPT 5341-RKN-BJY

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ELECTRONIC SWITCHING SYSTEMS

NO. 3

NETWORK FRAME
CIRCUITSECTION I - GENERAL DESCRIPTION1. PURPOSE OF CIRCUIT

1.01 This circuit describes the interconnection of all the units mounted on the network frame. Table A shows all circuits (units), with the SD numbers, which are used on the network frame, with the exception of the circuits that are shown in the Network Frame Circuit SD only.

TABLE A
NETWORK FRAME CIRCUITS

CIRCUIT NAME	CIRCUIT NO.
15A Remreed Grid Circuit	SD-3H120-01
15B Remreed Grid Circuit	SD-3H121-01
First and Second Stage Access Circuit	SD-3H122-01
Junctor and Junctor Control Circuit	SD-3H200-01
Universal Trunk Circuit	SD-3H220-01
CDPR/RR Circuit	SD-3H410-01
Filter Unit (-48 Volt)	J1A053AA-1, L73 (No SD)

2. GENERAL DESCRIPTION OF OPERATION

2.01 The detailed operation of all circuits listed in Table A may be found in the circuit description for each one. Any circuit that is shown only in the Network Frame Circuit SD will be explained in detail in this document.

SECTION II - DETAILED DESCRIPTION1. RINGING AND TCNE PLANT AFFLIQUE

1.01 The system control periodically alternates the on- and off-line states of the two halves of the ringing and tone (R&T) plant. As this occurs, the RTS relay on each network frame is operated or released. This causes the audible and

overflow tones from the on-line side to be connected to one set of splitting resistors, which are connected to the junctors. The relay operation causes either the R&T transfer alarm (0) or R&T transfer alarm (1) scan point to saturate in the master scanner. If both saturate, this indicates that a relay on one of the network frames did not transfer the tones.

2. BATTERY BOOST CONVERTER

2.01 A CONV OFF key on the control panel is used to turn the battery boost converter off and on. A lamp in the key lights when the OFF key is depressed. There are two keys: one for converter 0 and one for converter 1. Two diodes are mounted in the base of the frame. These allow -48 volt power to be supplied to the load if the battery boost converters fail or are removed.

3. JACKS

3.01 The TELA and TELB jacks and the SP jack are mounted on the front of the control panel. These jacks are multiplied together on all network frames. Any other TELA and TELB jacks are also connected in parallel and finally connected to the peripheral test circuit on the test frame. Any other SP jacks are also connected in parallel. These jacks are used for a general-purpose beltline. A pair of jacks on the back of the control panel provides -48 volt power for testing purposes.

4. FUSES AND FUSE ALARMS

4.01 There are three types of battery power provided to network frame circuits. Signal battery is the -48 volt power, provided to user circuits, which is unfiltered after entering the frame. Talk battery is filtered on the network frame and then distributed to user circuits. Boosted talk battery is talk battery that is boosted above the battery plant voltage and is used to extend the dc-signaling

TABLE B
CIRCUITS AND FUSES

CIRCUIT PACK	FUSE SIZE (AMPERES)	SIGNAL FUSE DESIGNATION	TALK FUSE DESIGNATION	BOOSTED TALK FUSE DESIGNATION	CIRCUIT PACKS PER FUSE	TOTAL CIRCUIT PACKS
Trunk	0.75	ST (0-5)	TT (0-5)	-	4	24
Junctor	0.75	SJ (0-7)	-	BJ (0-7)	4	32
CDPR	0.75	SCI (0-3)	-	BCD (0-3)	1	4
PR	0.75	SRR (0-2)	TRR (0-2)	-	1	3
PD	0.18	SPL (0-7)	-	-	1	8
*	0.75	(0, 1) (A, B, C) (0-3)	-	-	*	*
Battery Boost	0.75 5	- -	BF0, BF1 FF0, FF1	- -	1 per 2 Fuses	2

Note: * There are six 15A remreed grid units. Each fuse supplies power to 16 lines. There are a maximum of 384 lines.

range to 1600 ohms without special per-line treatment. Table B contains a list of circuits and how the power supplied to them is fused.

4.02 The LT fuse is a 0.75-A fuse which supplies power to the -48 volt test jack. The MC fuse is a 0.5-A fuse which supplies power to the CONV OFF lamps, the FA lamp, and the RTS relay.

4.03 When any fuse supplying power to the 15A remreed grids blows, the FAA relay operates. This lights the FA lamp in the fuse panel and sends a contact closure to the line-attending-element fuse alarm scan point in the master scanner matrix circuit.

4.04 When any other fuse blows, the FAB relay operates and also lights the FA lamp. A contact closure is sent to the trunks, junctors, and service circuits common fuse alarm scan point.

4.05 Both the FAA and FAB relays have noise-suppression networks around the coils. Resistors are used to keep the -48A bus and -48B bus battery separated if a fuse on each bus blows. This is true for both relays, but the FAB relay also has battery boost fuse alarms connected to it. Thus, additional resistors keep the two buses separate and keep the regular battery separate from the boosted battery.

SECTION III - REFERENCE DATA

1. WORKING LIMITS

1.01 None.

2. FUNCTIONAL DESIGNATIONS

2.01 None.

3. FUNCTIONS

3.01, This circuit shows the interconnection of all circuits on the network frame and the connections to any other circuits on other frames.

4. CONNECTING CIRCUITS

4.01 When these circuits are listed on the keysheets, the connecting information thereon is to be followed.

- (a) Network Frame Circuit - SD-3H901-01.
- (b) Control Frame Circuit - SD-3H902-01.
- (c) 881A Ringing and Tone Plant - SD-82255-01.
- (d) Charge and Discharge Circuit (151A Power Plant) - SD-82304-01.

5. MANUFACTURING TESTING REQUIREMENTS

Intermediate Requirements

5.01 None.

End Requirements

5.02 The manufacturing testing requirements are specified in the X-79037 specification.

6. TAKING EQUIPMENT OUT-OF-SERVICE

6.01 Information for taking any circuit on this frame out-of-service is found in IM-3H000 and OM-3H000.

SECTION IV - REASONS FOR REISSUE

D. Description of Changes

D.1 Provided complete CD information.

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