

CIRCUIT DESCRIPTION

CD-3H208-01
ISSUE 1
APPENDIX 1A
DWG ISSUE 2A
DISTN CODE 1T11

4

ELECTRONIC SWITCHING SYSTEMS

NO. 3

NOISE IMMUNITY LINE
CIRCUIT

CHANGES

B. Changes in Apparatus

B.1 Removed

Circuit Pack FB407 - App Fig. 2

D. Description of Changes

D.1 Rated the loop start option (option Z) Mfr Disc. Rated circuit pack FB407 Mfr Disc. That circuit should be removed from service.

F. Changes in Description of Operation

F.1 In Section I, 1.01, delete reference to FB407.

F.2 In Section II, delete 1.04.

F.3 Section III, 1.01, delete reference to "Maximum external circuit loop resistance (loop-start) 2.850 ohms."

F.4 Delete Section III, 3.02.

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DEPT 5333-RLB-GH

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ELECTRONIC SWITCHING SYSTEMS

NO. 3

NOISE IMMUNITY LINE
CIRCUIT

SECTION I - GENERAL DESCRIPTION

1. PURPOSE OF CIRCUIT

1.01 This circuit is used to prevent false line originations by isolating those lines exhibiting excessive longitudinal noise from their line ferroids. Up to 16 lines are served by the unit consisting of as many as eight circuit packs (FB407 and/or FB408) and eight relays.

2. GENERAL DESCRIPTION OF OPERATION

2.01 The longitudinal noise on a ground-start line may be severe enough to cause the line ferrod to indicate a false line origination. To prevent this, the noise immunity line circuit is designed to detect a true origination and give a noise-free loop closure to the line ferrod.

SECTION II - DETAILED DESCRIPTION

1. NOISE IMMUNITY

1.01 A line relay (L) that is less sensitive to longitudinals is substituted for the line ferrod on the ring lead of the incoming line. A service request (effectively grounding the R lead) operates the L relay and one contact on this relay provides a loop closure to the line ferrod. The processor detects the saturated ferrod via the scanner and directs the distribute point circuit to operate the A-state relay. This cuts the line through to the network appearance and then removes the L relay from the R lead. The A-state relay is released when a disconnect from the calling party is detected by the processor via the scanner and this opens the line to the network appearance. When no relays are operated, the circuit is idle.

- 1.02 Whenever this circuit is used, the line ferrod sensor must be equipped for loop-start operation (battery and ground for the ferrod must be provided at the ferrod).
- 1.03 A contact closure on the A relay, not connected to T or R, is used for any connecting circuits requiring a sleeve lead indication.
- 1.04 Normally the ground-start option Y (FB408) is used, but the loop-start option Z (FB407) is also available and uses the ground in the noise immunity line circuit.

2. TESTING

- 2.01 Operation of the B-state relay also operates the L relay to verify that it is working properly. When both A- and B-state relays are operated, a continuity check may be made toward the network appearance.

SECTION III - REFERENCE DATA

1. WORKING LIMITS

1.01 Resistance Limits

Maximum External Circuit Ring Resistance (Ground-Start)	2,580 ohms.
Maximum External Circuit Loop Resistance (Loop-Start)	2,850 ohms.
Minimum Insulation Resistance	10,000 ohms.

1.02 Voltage Limits

Maximum Ground Potential	±3 volts.
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2. FUNCTIONAL DESIGNATIONS

2.01 Relays

<u>Designation</u>	<u>Meaning</u>
L	Line

3. FUNCTIONS

- 3.01 Detects originations on ground-start lines and presents a noise-free loop closure to the ferrod.

3.02 May also be used on loop-start lines.

3.03 Provides a contact closure to any circuit requiring a sleeve lead indication.

4. CONNECTING CIRCUITS

4.01 When this circuit is listed on a key sheet, the connecting information thereon should be followed.

(a) 15A Remreed Grid Circuit - SD-3H120-01

(b) Distribute Point Circuit - SD-3H150-01

(c) Miscellaneous Frame Circuit - SD-3H903-01.

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 the specifications of the circuit requirements table are met, and that the circuit is capable of performing all functions stated in this circuit description.

6. TAKING EQUIPMENT OUT OF SERVICE

6.01 Each circuit is taken out of service by taking the customer line out of service.

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