CIRCUIT DESCRIPTION

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ELECTRONIC SWITCHING SYSTEMS

NO. 3

DIAL-TONE-FIRST COIN LINE CIRCUIT

SECTION I - GENERAL DESCRIPTION

1. PURPOSE OF CIRCUIT

1.01 The purpose of this circuit is to specify the wiring information for the J3H00EE unit, which provides the means of wiring and physically mounting eight circuit packs to provide +48 volts dc potential for coin lines in No. 3 ESS. Also provided are the fuses needed for -48 volt dc signal battery, the +48 volts dc talk battery, and the filters for the +48 volt dc talk battery. All dial-tone-first units will be mounted on the miscellaneous frames.

2. GENERAL DESCRIPTION OF OPERATION

2.01 The operation of this circuit involves placing +48 volts dc potential toward the coin line on the ring lead and keeping the tip lead at ground. Also, the circuit repeats the supervision of the coin line back to the junctor circuit, where it is maintained.

SECTION II - DETAILED DESCRIPTION

1. DIAL TONE FIRST (DTF) CIRCUIT

1.01 This circuit is used to connect a coin telephone to a +48 volt dc source to disable the TOUCH-TONE* pad and to release a single nickel dropped into the coin telephone. There are two DTF circuits on one circuit pack. Distribution fuses for both -48 and +48 Vdc and the filters of the +48 Vdc are provided on this unit.

POWER DISTRIBUTION

1.02 The +48 volt talk battery, via an A and B bus, comes to the DTF unit from the miscellaneous power frame, and is filtered at the unit by C1, R1 for the A bus and C2, R2 for the B bus. After the filter, power is distributed to the circuit packs by fuses DFA0 through DFA3 for the A bus and fuses DFB0 through DFB3 for the B bus.

1.03 The -48 volt signal battery, via an A and B bus, comes to the DFT unit from the miscellaneous frame circuit. Distribution of the -48 volt battery to the DTF circuit packs is done through fuses DCA0 through DCA3 for the A bus and DCB0 through DCB3 for the B bus.

DTF CIRCUIT

1.04 The DTF circuit, being a line circuit, is connected directly to a coin telephone that is set for dial-tone-first operation. The circuit pack contains two DTF circuits that are operated completely independently of each other. With the circuit in the bypass state, the coin telephone is connected directly to the junctor circuit from which battery is obtained and supervision is maintained for the coin telephone.

1.05 With the circuit in the reverse battery state, +48 volt talk battery is placed on the ring lead to the coin telephone and ground is maintained on the tip lead. Capacitors C1 and C2 are placed into the circuit to pass ac signals and to provide dc isolation between +48 volt battery and the -48 volt battery coming from the junctor circuit. Loop current to the coin telephone causes relay K2 to operate, thus closing a dc current path through L2 back to the junctor circuit. L2 provides a low impedance for dc continuity while maintaining a high impedance to voice signals. Supervision is maintained at the junctor circuit with dc current.

1.06 One relay, designated A and operated by the distributor circuit under program control, is used to provide the necessary states for the various functions of the circuit. EAch state is defined by a particular relay operating or releasing.

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* Registered U.S. Patent Office.

SECTION III - REFERENCE DATA

1. WORKING LIMITS

1.01 The maximum external loop resistance is 1000 ohms. The minimum insulation resistance is 10,000 ohms.

2. FUNCTIONAL DESIGNATIONS

2.01 Relays

Designation	Meaning
A	This relay is alphabetically designated for program reference.

3. FUNCTIONS

3.01 Provides a direct connection between the coin telephone and the junctor circuit.

3.02 Provides the +48 volts to the ring lead and repeats supervision to the junctor circuit from the coin telephone.

4. CONNECTING CIRCUITS

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

(a) Distribute Point Circuit - SD-3H150-01.

(b) Network Frame Circuit (Network Appearance) - SD-3H901-01.

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 drawing, that the requirements 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 Information for taking this circuit out of service is found in IM-3H000 and OM-3H000. Also, the associated fuses must be removed before removing the DTF circuit from this unit.

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