

## **111A KEY EQUIPMENT SUPPLIES**

### **1. GENERAL**

1.01 This section lists in alphabetical order the apparatus and equipment required for the 111A key equipment. Items commonly used in other types of station systems are not included.

### **2. SUPPLIES**

#### **Amplifiers:**

**J53020L, List 2.** Consists of a 142 B-15 amplifier equipped with a KS-7586 Cord 4 ft. long, and a 405 B-15 panel. Required for loudspeaker lines to amplify speech input into the loudspeaker. Vacuum tubes are not furnished with amplifier and should be ordered separately. Requires two amplifier adapters P-258197 for mounting the amplifier in the cabinet.

**124D.** Equipped with a KS-7586 cord 4 feet long, a Hubbell 112 cord grip and a 405 B panel. May be used in place of the 142 B-15 amplifier on loudspeaker lines to amplify speech input into the loudspeaker. Vacuum tubes are not furnished with amplifier and should be ordered separately. Requires two amplifier adapters P-258197 for mounting the amplifier in the cabinet.

#### **Cabinet:**

**Apparatus, J53020L, List 1.** For housing the relay equipment, amplifier, and fuse panel. The cabinet, as shipped by the Western Electric Co., will contain a number of basic items required at all installations, wired and assembled, as follows:

Cabinet—ED-91981-01, G10

Fuse Panel—ED-90425-01, G2

Fuse Panel Adapters—ED-90335-01, G4  
Amplifier Adapters—P-258197  
Telephone Circuit—J53020B  
C.O. or P.B.X. Line Circuit—J53020C,  
List 1 and List 2  
Resistance Hybrid and Muting Circuit—  
J53020J  
A-C Supply Circuit—SD-69194-01, Fig.  
12.

Other equipment items such as added line units, required in addition to the basic items above must be ordered separately as required by each particular installation.

Circuit—SD-69194-01, Figs. 2, 3, 9, and 12  
Equipment—ED-69214-01

**Cords:**

**H4AC-9.** Four-conductor handset cord for connecting handset to mounting.

**D20C.** Twenty-conductor cord, used with the D29B cord to connect the key and lamp panel to terminal blocks on the console.

**D29B.** Twenty-nine-conductor cord, used with the D20C to connect the key and lamp panel to terminal blocks on the console.

**Filters:**

**61A.** For connection across the contacts of the 7A buzzer on back of the key and lamp panel to prevent interference due to buzzer noise being heard in radio receiving sets.

**61L.** For connection to dial contacts to prevent interference due to dial pulses being heard in radio receiving sets.

**Loudspeaker:**

**J53020L, List 3.** For use on lines arranged for loudspeaker operation. Consists of a loudspeaker per KS-12046, arranged to be mounted from the ceiling.

**Mounting:**

**Handset, G2-3.** Hang-up handset mounting, for use with push-to-talk handset. Circuit is wired locally in the field in accordance with Fig. 1, SD-69194-01.

**Panels:**

**Fuse, ED-90425-01, G2.** For mounting the No. 35 type fuses (2 amp.) employed in the system. Requires two fuse panel adapters for mounting the panel in the cabinet. The fuse panel adapters are known as ED-90335-01, G4, this designation including both of the required adapters.

**Key and Lamp J53020A.** For mounting in the face of the C.A.A. console. Consists of a panel 19" x 5-1/4", on which are mounted the keys, lamps, volume controls, and other apparatus required for 5 lines. This apparatus is wired to two multi-conductor cords; one having 20 and the other 29 conductors which serve to connect the panel to 6 connecting blocks. These connecting blocks with covers, backboards, and mounting screws are shipped with the panel for installation on the console as required.

Circuit—SD-69194-01, Fig. 1

Equipment—ED-69211-01

**Set:**

**Hand, F3P-3.** Push-to-talk handset for use by the attendant in telephoning on all lines. Consists of F3P-3 handset, with F1 transmitter unit and HA3 receiver unit, but modified locally in the field to use a 4-conductor cord (H4AC-9) instead of the usual 5-conductor cord. Transmitter circuit is normally open and is closed when a push button in the handle is depressed.

**Tubes:**

**Vacuum.** The following vacuum tubes are required in the voice operated busy signal circuit and in the amplifier. On new installations they must be ordered separately. They may also be required for replacements during the life of the equipments. The amplifiers should not be operated with a mixed complement of W. E. Co. and non W. E. Co. amplifier tubes in the output stage.

**Voice Operated Busy Signal Circuit**

1—6C5

1—6V6

1—5Y3GT

**142 B-15 Amplifier**

- 3—6SN7
- 2—6L6 or 350B (W.E. Co.)
- 1—5U4G
- 1—6J7 or 1620 (RCA)

**124D-24 Amplifier**

- 2—348A (W.E. Co.) or 6J7G or 6J7
- 2—350B (W.E. Co.) or 6L6G or 6L6
- 1—274B (W.E. Co.) or 5U4G or 5T4
- 1—1612 (RCA)

**Units:**

**Telephone, Attendant's, J53020B.** Consists of a 23" mounting plate on which is mounted an induction coil, condensers, retardation coil, relays and similar apparatus used in the attendant's telephone circuit.

Circuit—SD-69194-01, Fig. 2

Equipment—ED-69212-01

**Line, Central Office or P.B.X., J53020C (List)**

**List 1.** Consists of a 23" mounting plate on which is mounted the relay apparatus for one line, which may be a central office or P.B.X. line, a dial intercommunicating line, or a dial selective private line.

**List 2.** Contains relays for one flashing circuit furnished on the same mounting plate as List 1.

Circuit for List 1—SD-69194-01, Fig. 3

Circuit for List 2—SD-69194-01, Fig. 11

Equipment—ED-69212-01

**Line, Two-Wire Interphone, J53020E (List)**

**List 1.** Consists of a 23" mounting plate on which is mounted the relay apparatus for one 2-wire interphone line circuit.

**List 2.** Consists of the relay apparatus for a second 2-wire interphone line circuit furnished on the mounting plate of List 1.

**List 3.** Consists of a 120H repeating coil furnished on the mounting plate of List 1. For use on lines having an impedance of less than 735 ohms.

**List 4.** Consists of a 120K repeating coil furnished on the mounting plate of List 1. For use on lines having an impedance between 735 ohms and 1200 ohms.

**List 5.** Consists of a 120L repeating coil, furnished on the mounting plate of List 1. For use on lines having an impedance greater than 1200 ohms.

Circuit (Lists 1 to 5) SD-69194-01, Fig. 5  
Equipment (Lists 1 to 5) ED-69212-01

**Line, Two-Wire Local, Loudspeaker Signaling Incoming, J53020F (List)**

**List 1.** Consists of a 23" mounting plate on which is mounted relay equipment for a 2-wire local private line circuit in which the incoming signaling is by means of the loudspeaker.

**List 2.** Consists of the relay equipment for one additional 2-wire local private line circuit furnished on the same mounting plate as List 1.

Circuit—SD-69194-01, Fig. 6  
Equipment—ED-69212-01

**Line, Two-Wire Local, Ring-Down Signaling Incoming, J53020G**

**List 1.** Consists of a 23" mounting plate containing relay equipment for one 2-wire local private line circuit with 20 cycle signaling for incoming calls.

Circuit—SD-69194-01, Fig. 7  
Equipment—ED-69212-01

**Line, Local, Loudspeaker Signaling in Both Directions, J53020H (List)**

**List 1.** Consists of a 23" mounting plate having relay apparatus for one loudspeaker intercommunicating line.

**List 2.** Consists of the relay apparatus for one additional loudspeaker intercommunicating line mounted on the same relay mounting plate as List 1.

Circuit—SD-69194-01, Fig. 8  
Equipment—ED-69212-01

**Resistance Hybrid and Muting, J53020J**

**List 1.** Consists of a 23" mounting plate containing the resistance networks and relays for one resistance hybrid and muting circuit.

Circuit—SD-69194-01, Fig. 9

Equipment—ED-69212-01

**Voice Operated Busy Signal, J53020K**

**List 1.** Consists of a 23" x 4" mounting plate containing the condensers, resistances, power transformer and other apparatus for one voice operated busy signal circuit. The vacuum tubes are not furnished with the unit and should be ordered separately. Used for lighting a busy lamp when speech is present on a line.

Circuit—SD-69193-01, Fig. 1

Equipment—ED-69210-01

**Line, Four-Wire Interphone, J53020M (List)**

**List 1.** Consists of a 23" mounting plate on which is mounted the line pick-up relay for one 4-wire interphone line, per SD-69194-01, Fig. 4.

**List 2.** Consists of a line pick-up relay for a second 4-wire interphone line, per SD-69194-01, Fig. 4. This relay mounts on the same mounting plate as List 1.

**List 3.** Consists of a signal control relay, SD-69194-01, Fig. 14, mounted on the same mounting plate as List 1. It is used for signaling control when the 111A key equipment is multiplied to 102A or 109A key equipments, and J53020N is not provided.

**List 4.** Consists of a switching control relay, SD-69194-01, Fig. 15, mounted on the same mounting plate as List 1. It is used for switching control when the 111A key equipment is multiplied to 102A or 109A key equipments, and J53020N is not provided.

The equipment is shown on ED-69212-01.

### **Line, Four-Wire Termination, J53020N (List)**

**List 1.** Consists of a 23" mounting plate containing the apparatus for one 4-wire interphone line termination, less two 120 type repeating coils described below, and less the 89 type resistances for the A and C pads which must be ordered separately, as required. The circuit is shown on SD-69194-01, Fig. 13.

**List 2.** Consists of two 120H repeating coils mounted on the same mounting plate as List 1, for lines having an impedance of less than 735 ohms.

**List 3.** Consists of two 120K repeating coils mounted on the same mounting plate as List 1, for lines whose impedance is between 735 ohms and 1200 ohms.

**List 4.** Consists of two 120L repeating coils mounted on the same mounting plate as List 1, for lines having an impedance greater than 1200 ohms.

**List 5.** Consists of a signaling control relay furnished on the same mounting plate as List 1. Used where signaling is on a simplex metallic basis and switching control is not required. See SD-69194-01, Fig. F.

The equipment is shown on ED-69212-01.

### **Supplementary, Composite Signaling and Switching, J53020P**

**List 1.** Consists of a 23" mounting plate on which are mounted the coils and condensers shown in Fig. E, SD-69194-01. Used for signaling and switching control, on a composite basis, in connection with 4-wire interphone lines. The equipment is shown on ED-69212-01.

### **Supplementary, Metallic Signaling and Switching, J53020R**

**List 1.** Consists of a 23" mounting plate containing relays, resistances and condensers as shown in Fig. D, SD-69194-01. Used for signaling and switching control on a metallic basis on 4-wire interphone lines. The equipment is shown on ED-69212-01.