

CIRCUIT DESCRIPTION**CD-69129-01****Station Apparatus Development Department****Issue 7-D****Dwg. Issue 7-D**

STATION SYSTEMS
KEY TELEPHONE SYSTEM NO. 1A
KEY AND TELEPHONE CIRCUIT
ARRANGED FOR PICKUP,
CUT-OFF, AND SIGNALING

0. CHANGES**0.1 CHANGED AND ADDED FUNCTIONS**

None.

0.2 CHANGES IN APPARATUS

| Superseded Cord | Superseded by Cord | Used in Telephone Set |
|--------------------------------------|--------------------------------------|---|
| D10D D12A D18C D10D D12A | D10G D28B D28B D23C D27A | 440AA, AB, AC 441AA, AB, AC 445AA, AC 440BA, BB, BC 441BA, BB, BC |
| D16B D10D D12A D16B D10D | D27A D27A D27A D27A D27A | 445BA, BC 440CA, CB, CC 441CA, CB, CC 445CA, CC 440DA, DB, DC |
| D12A D16B D14A D16B D23A | D27A D27A D19B D28B D28B | 441DA, DB, DC 445DA, DC 460AA, AB, AC 461AA, AB, AC 465AA, AC |
| D14A D16B D22B D14A D16B | D23C D28B D28B D28B D28B | 460BA, BB, BC 461BA, BB, BC 465BA, BC 460CA, CB, CC 461CA, CB, CC |
| D22B D14A D16B D22B D12A | D28B D28B D28B D28B D23C | 465CA, CC 460DA, DB, DC 461DA, DB, DC 465DA, DC 460EA, EB, EC |
| D14A D18C D12A D14A D16B | D28B D28B D23C D35A D35A | 461EA, EB, EC 465EA, EC 460FA, FB, FC 461FA, FB, FC 465FA, FC |

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0.3 CHANGES IN CIRCUIT REQUIREMENTS

(Not Associated with 0.2 Above)

None.

0.4 DESCRIPTION OF CIRCUIT CHANGES

- (a) A second table has been added to Note 101 to provide for the connection of the vinyl-jacketed cords.
- (b) Note 311 is added.

1. PURPOSE OF CIRCUIT

This circuit provides a means for associating the talking and dialing circuit of a station with a number of central office, PBX, private, or intercommunicating lines of a Key Telephone System No. 1A by means of pickup keys. It also provides for excluding other stations, cutting off other stations, extension ringers, or a listening-in set, and for signaling intercommunicating stations.

2. WORKING LIMITS

None.

3. FUNCTIONS

3.1 CENTRAL OFFICE OR PBX LINES

This circuit provides for:

- (a) Picking up any one of a maximum of six central office or PBX lines.
- (b) Dialing.
- (c) An audible signal on incoming calls.
- (d) A cutoff key which may be used for disconnecting an extension station or an extension ringer from a given line, and when desired, for connecting the ringer in the set to the line. Also it is used to disconnect a listening-in set.
- (e) An exclusion key, which may be operated when the handset is off the mounting to disconnect one or more extension stations from the first line, and which will be restored to normal when the handset is replaced on the mounting.

3.2 PRIVATE OR INTERCOMMUNICATING LINES

This circuit provides for:

- (a) Picking up an intercommunicating line.
- (b) Signaling an intercommunicating station.
- (c) Picking up a private line.
- (d) Signaling a private line station.

4. CONNECTING CIRCUITS

When this circuit is listed on the key sheet, the connecting information thereon is to be followed. The following are typical connecting circuits:

- (a) Line and signaling circuit of Key Telephone System No. 1A.
- (b) Key telephone circuits of Key Telephone System No. 1A.

5. DESCRIPTION OF OPERATION

5.1 ANSWERING OR ORIGINATING A CALL

To answer or originate a call the pickup key associated with the desired line must be operated. With the pickup key operated and the handset removed from the mounting, the station is connected to the central office, PBX, private, or intercommunicating line in the usual manner. When originating a call on an intercommunicating or a private line it will be necessary to operate the signaling key to signal the called party, except when the intercommunicating automatic signal circuit is used.

5.2 DIALING

In the case of an outgoing call which requires dialing the dial is operated in the usual manner.

5.3 EXCLUSION

The exclusion key is associated only with the first line. When it is desired to exclude other stations from this line, the exclusion key is operated. This opens the line to all excluded stations. When the handset is replaced on the mounting at the end of the call, the exclusion key is automatically restored to normal, reconnecting the excluded stations to the line.

If it is desired to flash the operator while the exclusion key is in the operated position, the mounting plunger which is not associated with the exclusion key is operated in the usual manner for flashing. This does not disturb the position of the exclusion key.

The exclusion key also can be used as a common ringer or buzzer cutoff key while the handset is off its mounting.

5.4 RINGER IN SET

The ringer in the set may be used as either a line ringer or a common ringer. When it is used as a line ringer, it will operate on all incoming calls on the line with which the ringer is associated when ringing current is applied to the line at the central office or PBX. When it is used as a common ringer, it

will operate when ringing current is applied to any line at the central office or PBX with which the common ringer is associated.

5.5 BUZZER IN SET

The installer may replace the ringer which is provided in the key telephone set by a buzzer mounted on a 36A bracket. In this case the buzzer may be used as a signal common to a number of PBX or central office lines or as an intercommunicating signal.

5.6 INTERCOMMUNICATING SIGNALING

The intercommunicating signaling arrangement of Key Telephone System No. 1A provides for both code and selective signaling. When code signaling alone is employed, the operation of the signal key in the telephone set will operate all the buzzers of the system directly. When selective signaling alone is employed, a separately mounted 549A key or equivalent is required and the operation of the associated signal key will operate the desired buzzer. When both code and selective signaling are required at any station, it will be necessary to provide a relay shown on the line and signaling circuit which will operate whenever a signaling key is operated to operate the buzzers on a code signaling basis. The operation of a signaling key to signal on a selective basis is provided for by connecting the signaling leads directly to the buzzer leads without operating the relay. When the intercommunicating automatic signaling circuit is used in connection with an intercommunicating line, the buzzer at the called station operates when the handset at the calling station is removed from the mounting.

5.7 FUNCTION OF CUTOFF KEY

The cutoff key can be associated with only one line in the set, but provision is made to wire it to any desired line. It is used for disconnecting an extension station or an extension ringer from a given line, and, when desired for connecting the ringer in the set to the line. It is also used to disconnect a listening-in set.

5.8 PURPOSE OF THE TABLE UNDER NOTE 101

The table provides the information necessary for selecting the proper key telephone set required for a given type of service. Also it provides the information required to make the necessary wiring changes at the terminals in the set to secure certain optional features.

The table shows the key top diagram of all the different types of keys, the code number of the sets, and the code number of the cords used with the sets. Also it shows the color of the cord conductors and the terminals in the set to which these

conductors connect. The notes associated with the table explain the variation in connections which is employed to secure the combination of features.

5.9 61P FILTER AND 152A CAPACITOR

The 61P filter is used to suppress radio induction from the dial and is furnished only when specified. The 152A capacitor also is furnished only when specified, and is used to suppress radio induction from the 7-type buzzer when it is operated on direct current.

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