

CIRCUIT DESCRIPTION
STATION APPARATUS DEVELOPMENT DEPARTMENT
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STATION SYSTEMS
KEY TELEPHONE SYSTEM NO. 1A
KEY AND TELEPHONE CIRCUIT
FOR COMBINED TURN AND PUSH BUTTON
KEY TELEPHONE SETS

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

- D.1 The rating has been changed to "Mfr. Disc."
- D.2 Circles around "L2Y" were removed in 2 places in the last column of the table of Note 101.

All other headings under "Changes", no change.

1. PURPOSE OF CIRCUIT

- 1.1 This circuit provides a means for associating the talking and dialing circuit of a station with central office, PBX, private or intercommunicating lines of a No. 1A key telephone system by means of a combined turn and push button key. It also provides for excluding other stations, cutting off other stations, extension ringers or a listening-in set and for signaling intercommunicating stations or private lines.

2. WORKING LIMITS

- 2.1 None.

3. FUNCTIONS

- 3.1 On central office or PBX lines.
 - 3.11 Provides for picking up a maximum of two central office or PBX lines.
 - 3.12 Provides for dialing.
 - 3.13 Provides for an audible signal on incoming calls.

- 3.14 Provides for disconnecting an extension station or an extension ringer from a line and when desired connects the ringer in the set to the line. It is also used to disconnect a listening-in set.
- 3.15 Provides for an exclusion key which may be operated when the hand set is off the mounting to disconnect one or more extension stations from the first line and which will be restored to normal when the hand set is replaced on the mounting.
- 3.2 Provides for picking up a private or intercommunicating line.
- 3.3 Provides for signaling a private line or intercommunicating station.

4. CONNECTING CIRCUITS

- 4.1 Line and Signaling Circuit of the No. 1A Key Telephone System.
- 4.2 Key Telephone Circuits of the No. 1A Key Telephone System.

DESCRIPTION OF OPERATION

5. ANSWERING OR ORIGINATING A CALL

When two lines are used to answer or originate a call on line one, the turn button key must be in the normal position. To answer or originate a call on line two requires the operation of the turn button key. When only one line is used, the operation of the turn button key is not required since the lead from the line one is connected to the "L1" and "L2Y" terminals. When the hand set is 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 a private or intercommunicating line it will be necessary to operate the signaling key to signal the called party unless the intercommunicating line circuit with automatic signaling is used.

6. DIALING

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

7. EXCLUSION

The exclusion key is only associated 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 button 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 can also be used as a common ringer or buzzer cut-off while the hand set is off its mounting.

8. RINGER IN SET

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

9. INTERCOMMUNICATING SIGNALING

The intercommunicating signaling arrangement of the No. 1A key telephone system provides for both code and selective signaling. When code signaling alone is employed the operating of the signal key in the set will operate all the buzzers of the system directly. When selective signaling alone is employed the operation of the signaling key in the set or any signal key in a separate key unit will operate the desired buzzer. A buzzer at any station may be operated on both a code and a selective signaling basis when a relay (shown on the line and signaling circuit) is used. The signaling key operates the relay which operates the buzzers on a code signaling basis. A buzzer may also be selectively operated directly from the contacts of a signaling key.

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10. PRIVATE LINE SIGNALING

The operation of the signaling key operates a relay in the private line circuit to signal the distant end of the private line circuit.

11. OTHER FUNCTION OF TURN BUTTON KEY

The turn button key is also used for connecting an extension station or an extension ringer to a line and when desired disconnects the ringer in the set from the line. It is also used to connect a listening-in set.

12. 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. It also provides the information required to make the necessary changes to secure certain optional features.

The table shows the basic features provided by the telephone sets, the code number of the sets and the code number of the cords used with the sets. It also shows the color of the cord conductor and the terminals to which the conductors of the cords terminate, to secure the combination of features.

13. 61P FILTER AND 152A CONDENSER

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

BELL TELEPHONE LABORATORIES, INC.