

STATION SYSTEMS  
KEY TELEPHONE SYSTEM NO. 1A  
LAMP, KEY AND TELEPHONE CIRCUIT  
WITH LAMPS IN TELEPHONE SET  
ARRANGED FOR PICK UP,  
CUT-OFF AND SIGNALING

1. PURPOSE OF CIRCUIT

- 1.1 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 No. 1A key telephone system 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. It provides for lamps in the set which will illuminate the pickup key buttons to indicate incoming calls on the lines or when lines are busy.

2. WORKING LIMITS

- 2.1 None.

3. FUNCTIONS

- 3.1 On central office or PBX lines.
- 3.11 Provides for picking up any one of a maximum of six central office or PBX lines.
- 3.12 Provides for illuminating the pickup key buttons on incoming calls or when lines are busy.
- 3.13 Provides for dialing.
- 3.14 Provides for an audible signal on incoming calls.
- 3.15 Provides for a cut-off key which may be used for disconnecting an extension station or an extension ringer from a given line and when desired connects the ringer in the set to the line. It is also used to disconnect a listening-in set.

- 3.16 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 an intercommunicating line.
- 3.3 Provides for signaling an intercommunicating station.
- 3.4 Provides for picking up a private line.
- 3.5 Provides for signaling a private line station.

#### 4. CONNECTING CIRCUITS

When this circuit is listed on a keysheet, the connecting information thereon is to be followed.

- 4.1 Line and Signaling Circuits of the No. 1A key telephone system - SD-69091-01 and SD-69136-01.
- 4.2 Key Telephone Circuits of the No. 1A key telephone system - SD-69186-01, SD-69187-01, SD-69096-01, SD-69128-01, and SD-69129-01.

#### DESCRIPTION OF OPERATION

##### 5. 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 hand set 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 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.

##### 6. ILLUMINATED BUTTONS

The illuminated button signals in the set may be used as combined line and busy signals as line signals only or as busy signals only. When they are used as combined line and busy signals the lamp illuminating the button will flash when there is an incoming call on the line and will be lighted steady when the line is busy. When

the lamps are used as line signals only, they will light steady on incoming calls. When they are used as busy signals only, the lamps will be lighted steady when the line is busy.

#### 7. DIALING

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

#### 8. 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 hand set 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 can also be used as a common ringer or buzzer cut off key while the hand set is off its mounting.

#### 9. RINGER IN SET

The ringer in the set may be used either as 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.

#### 10. BUZZER IN SET

The installer may replace the ringer that 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.

#### 11. 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 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 any 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 hand set at the calling station is removed from the mounting.

#### 12. FUNCTION OF CUT-OFF KEY

The cut-off key can only be associated with 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 connects the ringer in the set to the line. It is also used to disconnect a listening-in set.

#### 13. 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 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. It also 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 that is employed to secure the combination of features.

#### 14. 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.