

CIRCUIT DESCRIPTION
STATION APPARATUS DEVELOPMENT DEPT.
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STATION SYSTEMS
KEY TELEPHONE SYSTEM NO. 1A
STATION CIRCUITS
USING WIRING PLAN KEYS
AND SUBSCRIBER SETS

0. CHANGES

0.1 CHANGED AND ADDED FUNCTIONS

None.

0.2 CHANGES IN APPARATUS

None.

0.3 CHANGES IN CIRCUIT REQUIREMENTS (Not Associated with
0.2 Above)

None.

0.4 DESCRIPTION OF CIRCUIT CHANGES

Rating has been changed from A&M Only to Mfr. Disc.

1. PURPOSE OF CIRCUIT

This circuit provides for the use of wiring plan keys and subscriber sets in the 1A key telephone system. The line circuit, holding circuit, battery supply, and keys shown on the drawings can be used interchangeably with those shown on the standard drawings for this system. When used alone, it provides for incoming and outgoing service on a central office line or a PBX line and means for holding on these lines. It also provides for intercommunicating service. When used with the 1A key telephone system standard drawings, it will provide the same feature that the standard circuits provide.

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2. WORKING LIMITS

The working limits are shown in the station system range chart.

3. FUNCTIONS

When used alone, on central office or PBX line, this circuit provides for:

- (a) Individual audible signal on incoming calls.
- (b) Holding the line by means of a locked-in relay.
- (c) Removing the hold condition on the line when the line is again picked up at any station or when the line is momentarily opened at the central office or PBX.

When used on intercommunicating lines, the circuit provides:

- (a) Talking battery for stations arranged for intercommunicating service.

When the circuit is used with the 1A key telephone system standard circuits, it will provide for the same functions for which the standard circuits provide.

4. CONNECTING CIRCUITS

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

- (a) Standard central office subscriber's line circuits.
- (b) Standard PBX station line circuits.
- (c) Standard PBX long line circuits.
- (d) Key and telephone circuits of Key Telephone System No. 1A - SD-69129-01, SD-69133-01, SD-69196-01, SD-69206-01, and SD-69207-01
- (e) Line and signaling circuits of Key Telephone System No. 1A - SD-69091-01 and SD-69105-01.

5. DESCRIPTION OF OPERATION

5.1 INCOMING SIGNALS ON CENTRAL OFFICE, PBX, OR PRIVATE LINES

5.11 Individual Ringer

When ringing current is applied to the line at the central office, PBX, or distant end of a private line, the individual ringer associated with the line will operate in the usual manner. The (L) relay may operate on ringing current which, however, will perform no functions.

5.2 ANSWERING OR ORIGINATING A CENTRAL OFFICE OR PBX CALL

The operation of a pickup key connects the station set to a line. When a talking connection is established on the central office or PBX line, the (L) relay, if the holding circuit is provided, will operate. The (L) relay, however, performs no function at this time.

5.3 HOLDING ON CENTRAL OFFICE OR PBX CONNECTIONS

5.31 Establishing a Hold Condition

The line is held by the operation of the hold key in a key circuit. The hold key, when operated, opens the operating path for the (L) relay, releasing it, closes a circuit for operating the (H) relay through its primary winding in series with the central office or PBX loop and station set, and releases the pickup key. When the (H) relay operates, its holding tertiary winding will be connected across the line in series with its noninductive quaternary winding and in parallel with its primary winding. When the hold key is released, the operating primary winding circuit of the (H) relay will be opened, the (H) relay will be held operated by its tertiary winding, and the telephone set will be disconnected from the line. The secondary winding of the (H) relay and the "B" lead is used to balance the line which prevents crosstalk interference.

5.32 RELEASE OF HOLDING BRIDGE WHEN CALL IS AGAIN PICKED UP

When the call is again picked up at any station, the (L) relay will operate, which shorts the holding tertiary winding of the (H) relay, releasing this relay. This removes the holding bridge from across the line.

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5.33 RELEASE OF HOLDING BRIDGE FROM CENTRAL OFFICE OR PBX

In case the hold circuit is not removed by a station picking up the call, the hold condition may be released from the central office by opening the line momentarily, which releases the (H) relay restoring the circuit to normal.

Since the apparatus in this circuit can be used interchangeably with those of the standard circuits, the circuit description of the standard circuits will also apply when the apparatus on this circuit is used.

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