

1A1 KEY TELEPHONE SYSTEM
LINE PICKUP, HOLDING, LINE AND BUSY LAMPS,
AND COMMON AUDIBLE SIGNAL
202A, B, C, D; AND 212A
KEY TELEPHONE UNITS
CONNECTIONS

1.00 GENERAL

1.01 This section is reissued to provide connection information when 202C and/or D key telephone units are used with 202A and/or B and 212A key telephone units.

1.02 Due to extensive changes marginal arrows have been omitted.

2.00 CONNECTIONS

2.01 Fig. 1 is a schematic drawing of the 212A KTU with various wiring options.

2.02 Fig. 2 is a connection drawing of the 212A KTU and additional 202A, B, C, and/or D key telephone units. This includes terminations to be made for incoming lines, power supply, key or running cables to the stations, and cross-connection straps within and between the units. The connections shown provide for a steady hold lamp indication.

3.00 DESCRIPTION OF OPERATION

3.01 This section covers the description of operation of the 202A and/or B and 212A key telephone units. Refer to the section covering the 202C and D key telephone units for their operational features.

INCOMING CALL

Signaling

3.02 When ringing voltage is applied to the ring side of the line on an incoming call, the *R* relay operates on the first half cycle as the alternating current flows through bottom contacts 1 and 2 of relay *A*, *R* capacitor, *R* thermistor, and secondary winding of *R* relay to:

- Ground
or
- *ST* lead (when interrupted common audible signal is provided).

On the other half cycle, current flows through the *R* diode bypassing the *R* relay. The *R* relay operated:

- Locks operated under control of *A* and *TO* relays.
- Connects ground to heater winding of *TO* relay.
- Starts the lamp flashing circuit (relays *FA* and *FB*).
- Connects lamp lead to flashing circuit.
- Closes the common audible signal circuit (when steady audible signal is provided).

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Answering an Incoming Call

3.03 When an incoming call is answered, an *A1* ground is connected through the switchhook and operated line pickup key contacts of the telephone set over the line circuit *A* lead, operating the *A* relay. The *A* relay operated:

- Connects tip and ring of the line to the station.
- Opens the locking path of the *R* relay, releasing it.
- Transfers the lamp lead from flashing to steady.
- Short-circuits *H* relay windings.
- Operates *TO* relay, which in turn:
 1. Opens heater winding of thermal unit.
 2. Operates *PF* relay.

OUTGOING CALL

3.04 The procedure for operating an outgoing call is the same as for answering an incoming call, except for the *R* relay functions, which apply only on incoming calls.

HOLDING

3.05 Operating the hold key in the telephone set removes the ground from the *A* lead, releasing the *A* relay. The released *A* relay contacts remove the short circuit from the windings of the *H* relay, allowing it to operate on line current over the station loop. The *H* relay operated:

- Locks operated across the line as a holding bridge.
- Continues lighting the lamps steadily or transfers the lamp lead to wink hold (when wink hold feature is provided).
- Holds *TO* relay operated.

Release of the Holding Bridge

3.06 When a station picks up a line being held, the *A* relay operates as previously described. The *A* relay operated short-circuits the windings of the *H* relay, releasing it. This restores the circuit to the talking condition.

3.07 A permanent signal, caused by the hold circuit not being released by a station, can be released from the central office or PBX by opening the line momentarily. This allows the *H* relay to release, restoring the circuit to normal.

DISCONNECTION

3.08 When a station disconnects and the switchhook contacts are restored to an on-hook condition, the *A* relay releases. This extinguishes the signal lamp, releases the *TO* relay, and restores the circuit to normal.

POWER FAILURE

3.09 Except for the loss of locally powered visual and audible signals, during power failure conditions incoming and outgoing calls may proceed. The windings of the *H* relay are short-circuited by the released *PF* relay. Incoming calls will operate bridged ringers on the line.

3.10 If the local ringing supply is still operative (such as when central office generator is used), the common audible signal will operate, but will follow ringing on the line rather than locking in.

REFERENCES:

SD-69203-01
SD-69270-01
SD-69288-01

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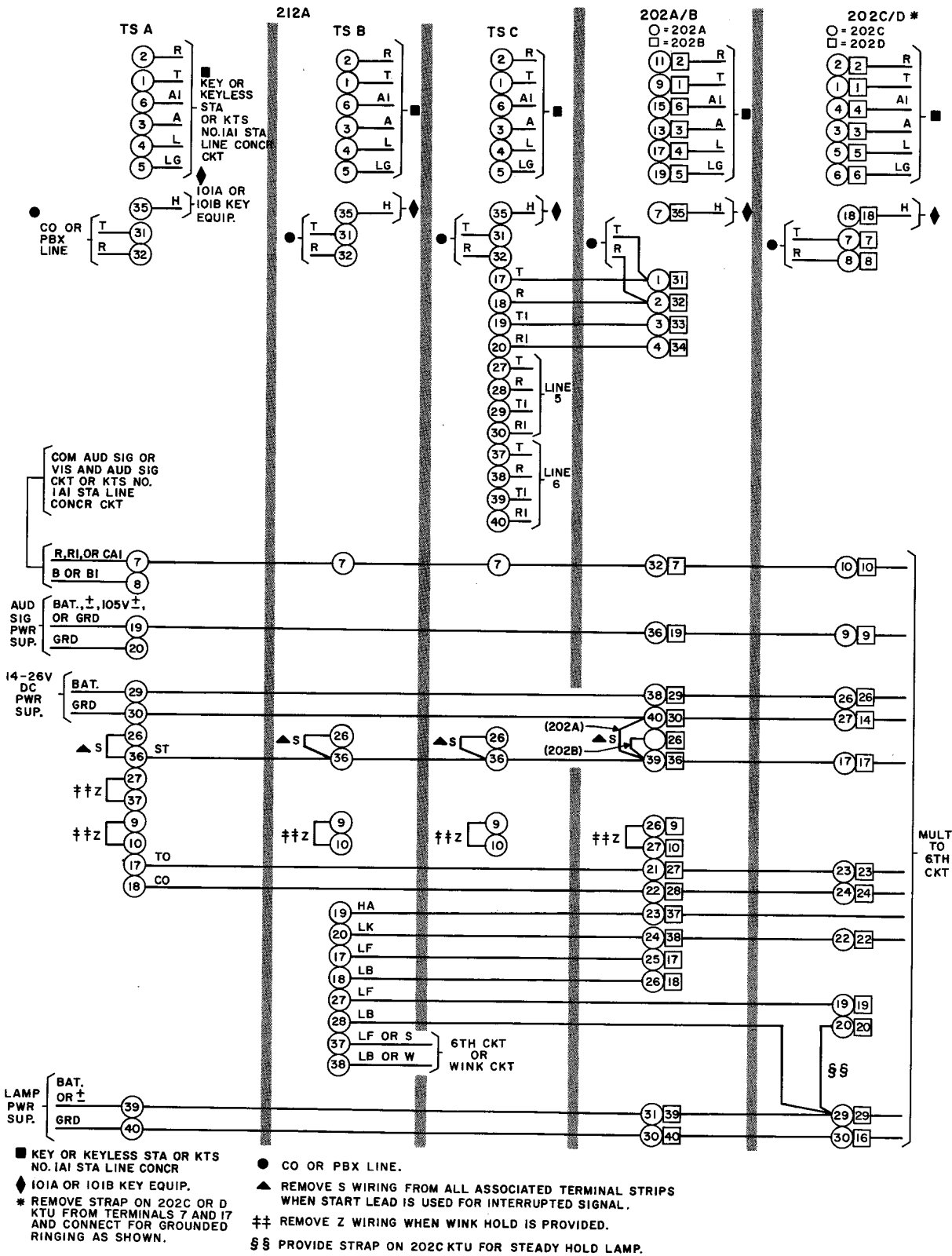


Fig. 2 - Connections and Strappings for 212A KTU and Additional 202A, B, C, and/or D Key Telephone Units