1. GENERAL

1.01 The 601A, 602A, and 603A (Fig. 1, 2, and 3) panels provide auxiliary mounting facilities for the 400 series key telephone units required to provide basic dial intercom, deluxe dial intercom, and intercom TOUCH-TONE® calling, respectively.

1.02 This section is reissued to:
- Cover complete redesign of factory wiring within the panels
- Add identification and installation information formerly contained in Section 518-215-118 which is hereby canceled.

Caution: Issue 1 of this section and Issue 2 of Section 518-215-118 cannot be used for identification, installation, and connections of 601A, 602A, and 603A panels.
1.03 This issue of the section is based on the following drawings:

- SD-69608-01, Issue 3—Station Systems, Key Telephone System No. 1A2, Dial Intercommunicating and Miscellaneous Panels
- SD-69567-01, Issue 8—Station Systems, Key Telephone System No. 1A2, Dial Selective Intercommunicating Line Circuit.

If this section is to be used with equipment or apparatus reflecting later issues of the drawings, reference should be made to the SDs to determine the extent of the changes and the manner in which the section may be affected.

1.04 **Basic Dial Intercom**: A station (on pickup) is connected to a common talking path which is part of the selector circuit. Station selection is...
then accomplished by dialing one digit (for 10-station selector) or two digits (for 19-station selector).

1.05 *Deluxe Dial Intercom:* Same as basic dial intercom plus flashing lamps on incoming calls, dial tone, station busy tone, audible ringback tone, and interrupted ringing.

2. **IDENTIFICATION**

**PURPOSE**

In 1A2 Key Telephone System arrangements to provide auxiliary mounting facilities for 584-type panels in large centralized installations.

**ORDERING GUIDE**

- Panel, 601A
- Panel, 602A
- Panel, 603A

(a) **Replaceable Components**

- Fuse, 24C (2A)*
- Fuse, 24E (1/2A)*
- Fuse, 24G (1-1/3A) †

* For 601 and 602A panels.
† For 602A panel only.

(b) **Associated Apparatus (Order Separately)**

- Block, Connecting, 66B4-25 (as required)
- Cable, Connector, A25B, A50B, or A75A (as required)
- Mounting, Apparatus, 69B or 69D (as required, order per Table A)
- Unit, Telephone, Key (as required, order per Table A)
- 1A1 Matrix Block

**DESIGN FEATURES**

(a) Can be installed on a 23-inch relay rack by using a 99A (MD) or 99B bracket or in a 16-type apparatus mounting.

(b) Four No. 8-32 RHM mounting screws are furnished with each panel.

(c) A retainer is provided to lock the KTUs in the connectors.

**601A Panel**

(d) Arranged to mount three basic dial intercom circuits (Table A).

**602 Panel**

(e) Arranged to mount one deluxe dial intercom circuit (Table A).

**601A and 602A Panels**

(f) Factory wiring is provided from the connectors to the jacks. This permits use of connector cables for line and station terminations.

(g) Connecting block on panel for terminating power, option, and TOUCH-TONE leads.

(h) Fuse panel provided with 24-type fuses for power distribution (Table B).

(i) Dimensions are 6 inches wide by 8 inches high.

**603A Panel**

(j) Designed to mount 426A and 427B (Series 4) or C KTUs (Table A) to provide TOUCH-TONE calling in 601A and 602A panels.

(k) Equipped with a 5-foot cable stub for connecting to the 601A or 602A panel.

(l) Dimensions are 4-1/2 inches wide by 8 inches high.
TABLE A

<table>
<thead>
<tr>
<th>KTU</th>
<th>DIAL INTERCOM FUNCTION</th>
<th>PANELS</th>
<th>APPARATUS MOUNTINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>407B</td>
<td>10-Code Selector Circuit</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>413A</td>
<td>Auxiliary Ringup Circuit</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>420A</td>
<td>Long Line Circuit</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>421A</td>
<td>Transfer Circuit (for DSS)</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>422B</td>
<td>Station Busy Selector Circuit</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>423A</td>
<td>Dial Tone, Busy Tone, and Audible Ringback Tone Circuit</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>424A</td>
<td>19-Code Selector Circuit</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>425B</td>
<td>Flashing Lamp Circuit</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>426A</td>
<td>TOUCH-TONE Adapter Circuit</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

* The 69-type apparatus mountings and associated KTUs provide optional features for the dial intercom systems. See Fig. 4 through 13 for additional information.

† If interrupted signal for intercom differs from that provided by existing panel interrupter, a separate 421A KTU and 69D apparatus mounting must be provided.

TABLE B

FUSE FUNCTIONS FOR 601A AND 602A PANELS

<table>
<thead>
<tr>
<th>PANEL</th>
<th>FUSE</th>
<th>CONN SERVED</th>
<th>±10V</th>
<th>±18V</th>
<th>SS †</th>
<th>A BAT.</th>
<th>B BAT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>601A</td>
<td>F1</td>
<td>1/2A 24E</td>
<td>J1A&amp;B</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>F2</td>
<td>2A 24C</td>
<td>J1A&amp;B</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>F3</td>
<td>1/2A 24E</td>
<td>J2A&amp;B</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>F4</td>
<td>2A 24C</td>
<td>J3A&amp;B</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>F5</td>
<td>1/2A 24E</td>
<td>J3A&amp;B</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>F6</td>
<td>2A 24C</td>
<td>J3A&amp;B</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>602A</td>
<td>F1</td>
<td>1-1/3A 24G</td>
<td>J3A&amp;B*</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>F2</td>
<td>1-1/3A 24G</td>
<td>Serves all conn</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>F3</td>
<td>1/2A 24E</td>
<td>J3A&amp;B</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>F4</td>
<td>1/2A 24E</td>
<td>J1B</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>F5</td>
<td>2A 24C</td>
<td>J3A&amp;B</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

* Also serves 603A panel.
† May be ±10V, ±24V, ±18V, or ±105V, depending on option provided.
3. INSTALLATION

3.01 For information on apparatus mountings and relay racks, refer to Section 463-140-100.

3.02 Fig. 4 through 13 show panel and connecting block layouts for 601A, 602A, and 603A panels.

3.03 When a 424A KTU (19-code circuit) is used in the 602A panel, an additional 422B KTU, 69D apparatus mounting, an A25B connector cable, and a 66B4-25 connecting block are required. (See Fig. 9 for layout.)

Note: A separate 421A KTU must be provided in a 69D apparatus mounting if interrupted signal for intercom differs from that provided by existing panel interrupter (see Fig. 8 and 9 for layout)

3.04 Panel and connecting block layouts are shown for optional features such as preset conference, DSS, and long line circuits. These configurations require additional 66-type connecting blocks, connector cables, 69-type apparatus mountings, and KTUs. (See Fig. 6, 7, 10, 11, and 12, whichever apply, for layouts of these options.)

3.05 Install panels on relay rack or 16-type apparatus mountings in the usual manner. A 99A (MD) or 99B bracket must be used when installing the panels on a relay rack.

3.06 Install 69-type apparatus mountings (if required).

3.07 Install 66B4-25 connecting blocks and stencil each block as required (Fig. 4 through 12).

601A and 602A Panels

3.08 Install A25B connector cables from panels to connecting blocks.

Note: A75A and A50B connector cables can also be used to connect 601A and 602A panels, respectively, to the connecting blocks. When using the A75A connector cable, the conductors in the BL-W, O-W, and G-W binders are terminated on connecting blocks 1, 2, and 3, respectively. When using the A50B connector cable, terminate the conductors in the BL-W and O-W binder on connecting blocks 1 and 2, respectively.

3.09 After all other panel connections have been made, use 20-gauge strapping wire to terminate power leads to connecting block on the panel. Strip ends of wire and be careful to avoid shorting adjacent terminals; then, connect power leads to the power supply provided for the 584-type panels.

3.10 Install key telephone units.

3.11 Make certain fuses are properly installed and not blown after power leads have been terminated.

603A Panel

3.12 Terminate free end of cable stub on connecting block located on 601A (Fig. 15) or 602A (Fig. 23) panel. Do not cut cable stub.

3.13 Install key telephone units.

4. CONNECTIONS

4.01 Fig. 14 and 22 show the connections of A25B connector cables to 66B4-25 connecting blocks for 601A and 602A panels, respectively.

4.02 The method of terminating leads on the 66B4-25 connecting block is shown below:
4.03 TOUCH-TONE (603A panel), power, interrupter and option connections for the 601A, and 602A panels are shown in Fig. 15 and 23, respectively. These connections should be made on the 66T1 connecting block located on the panel before installing KTUs.

4.04 Fig. 14 through 31 cover station connections, option connections, basic dial intercom, deluxe dial intercom, and 603A panel connections.

Do not cut cable tail on 603A panel. Store excess length by dressing in place.

CONNECTION INDEX

601A Panel (Basic Dial Intercom)

Fig. 14—A25B Connector Cables to 66B4-25 Connecting Blocks

Fig. 15—Power Leads, Option Strapping, and TOUCH-TONE Connections

Fig. 16—424A KTU—Transfer Digit Lead Connections

Fig. 17—407B KTU—Station Connections

Fig. 18—424A KTU—Station Connections

Fig. 19—420A KTU, Long Line Circuit Mounted in 69B Apparatus Mounting

Fig. 20—421A KTU Arranged for DSS Mounted in 69B Apparatus Mounting

Fig. 21—1A1 Matrix Block, Optional Dial Selected Preset Conference

602A Panel (Deluxe Dial Intercom)

Fig. 22—A25B Connector Cables to 66B4-25 Connecting Blocks

Fig. 23—Power and Interrupter Leads, Option Strapping, and TOUCH-TONE Connections

Fig. 24—424A KTU—Transfer Digit Lead Connections

Fig. 25—422B KTU—X1-X0, Station Busy Selector Circuit for Adding Tens Group and Optional 421A KTU to Provide Interrupted Signaling

Fig. 26—407B KTU, Station Connections

Fig. 27—424A KTU, Station Connections

Fig. 28—420A KTU, Long Line Circuit—Mounted in 69B Apparatus Mounting

Fig. 29—421A KTU Arranged for DSS Mounted in 69D Apparatus Mounting

Fig. 30—421A and 413A KTUs, Preset Conference Circuit Mounted in 69D Apparatus Mounting, and 1A1 Matrix Block

Fig. 31—421A KTU, Preset Conference Circuit Mounted in 69D Apparatus Mounting

5. REFERENCES

5.01 For additional information, refer to the following:

- Section 518-010-101 Centralized Key Telephone Installations
- Section 518-215-400 Service, 1A2 KTS Key Telephone Units, 400 Series.
- Section 518-215-410, Service, 1A2 KTS Panels, 583-and 584-Type
- Section 461-620-100, Matrix Block-1A1, Identification, Installation, Wiring and Maintenance
Fig. 4—601A Panel and Connecting Block Layout with Three 407B KTUs

Fig. 5—601A Panel and Connecting Block Layout with Three 424A KTUs
Fig. 6—601A Panel and Connecting Block Layout with Optional DSS Circuit
Fig. 7—601A Panel and Connecting Block Layout with Optional Long Line Circuit or Preset Conference Circuit
Fig. 8—602A Panel and Connecting Block Layout
with 407B KTU (10-Code Circuit)

NOTE:
- THIS CONN CABLE AND CONN BLK ARE NOT REQUIRED WHEN THE 407B KTU IS USED WITHOUT STATION BUSY OPTION.

SEE FIG. 25 AND 26 FOR CONNECTIONS.
Fig. 9—602A Panel and Connecting Block Layout with 424A KTU (19-Code Circuit)

Fig. 10—602A Panel and Connecting Block Layout with Optional DSS Circuit
Fig. 11—602A Panel and Connecting Block Layout with Optional Preset Conference Circuit
Fig. 12—602A Panel and Connecting Block Layout with Optional Long Line Circuit

NOTE:
SEE FIG. 2B FOR CONNECTIONS.
* IF USING 4078 KTU
† IF USING 424A KTU

Fig. 13—603A Panel Layout
Fig. 14—601A Panel, Connection of A25B Connector Cables to 6684-25 Connecting Blocks
Fig. 15—601A Panel, Connections of Power Leads, Option Strapping, and TOUCH-TONE
NOTE:
Any selected digit may be made the initial digit of the two digit dial code. Strap the R lead of the selected digit to the TD lead. The digit so assigned cannot be used for a station code.

Fig. 16—601A Panel, 424A KTU Connection of Transfer Digit Lead
Fig. 17—601A Panel, 407B KTU, Station Connections via Cross-Connections for Basic Dial Intercom
SECTION 518-215-418

TO TEL SET VIA CROSS-CONNS

TO AUD SIG VIA CROSS-CONNS

NOTE:

USE CONTINUOUS METHOD OF STRAPPING.

† SEE FIG. 16 FOR TRANSFER DIGIT CONNECTIONS.
‡ SEE FIG 5 FOR PANEL AND CONNECTING BLOCK LAYOUT

Fig. 18—601A Panel, 424A KTU, Station Connections via Cross-Connections for Basic Dial Intercom (Sheet 1)
Fig. 18—601A Panel, 424A KTU, Station Connections via Cross-Connections for Basic Dial Intercom (Sheet 2)
Fig. 19—601A Panel, 420A KTU, Long Line Circuit, Basic Dial Intercom, Connections to Optional KTU Mounted in 69B Apparatus Mounting
CONNECT LEADS WITH FOR DESIRED STATION CODE (NOTE 1)

CONNECT A WITH ROW AND COLUMN ASSIGNMENT FOR 6684-25 CONN BLOCK ON 601A PANEL

TO POWER SUPPLY FOR 584-TYPE PANEL

TO SIGNAL KEY (NOTE 2)

NOTES:
1. SELECT CODE AND CONNECT LEADS FOR SELECTED CODE AS SHOWN IN VERTICAL COLUMN.
2. PROVIDE SEPARATE SIGNAL KEY FOR EACH STATION CODE TO BE SELECTED.
3. PROVIDE A SEPARATE 421A KTU FOR EACH STATION CODE TO BE SELECTED.
4. TERMINATE CONNECT CABLE TO COL A IF LEFT-HAND BLOCK OR COLUMN A IF RIGHT-HAND BLOCK. REFER TO BLOCK DIAGRAM COVERING 6684-25 CONN BLOCK.
5. SEE FIG. 6 FOR PANEL AND CONN BLOCK LAYOUT.
6. IF "TOUCH TONE" IS PROVIDED, CONNECT CG LEAD FROM 603A PANEL TO TERM. 28 IN PLACE OF B GRD. CG LEAD FROM EXT BLK TERM. 19 TO 66T1 CONN BLK. TERM. 11 REMAINS AS SHOWN.
7. WHEN MORE THAN ONE 421A KTU IS USED FOR DSS, CONNECT BGRO OR THE CG LEAD AS FOLLOWS:

Fig. 20—601A Panel, 421A KTU, Arranged for DSS, Basic Dial Intercom, Connections to Optional KTU Mounted in 69D Apparatus Mounting
SECTION 518-215-418

NOTES:
1. USE 446F DIODE (PROCURE LOCALLY)
2. WHEN RINGERS ARE USED AS AUDIBLE SIGNALS, REMOVE RINGER CAPACITORS FROM CIRCUITS.

Fig. 21—601A Panel, Basic Dial Intercom, Connections to Optional Dial Selected Preset Conference Circuit Using IA1 Matrix Block

Page 22
Fig. 22—602A Panel, Connection of A25B Connector Cables to 6684-25 Connecting Blocks

NOTE:
WHEN BL LEAD IS USED TO PROVIDE BUSY TONE, CONNECT 400J DIODE IN EACH BL LEAD AS REQUIRED. POLE LOCALLY PROCURED DIODE AS SHOWN.

When BL lead is used to provide busy tone, connect 400J diode in each BL lead as required. Pole locally procured diode as shown.
Fig. 23—602A Panel, Connection of Power and Interrupter Leads, Option Strapping, and TOUCH-TONE

NOTES:
1. IF 1 AND 6 OPTIONS ARE PROVIDED, A 400J DIODE (PROCURED LOCALLY) MUST BE PLACED BETWEEN TERMINALS B4, C14 AND RH LEAD MOVED FROM TERM. A8 TO TERM. B8.
2. DIAL TONE PROVIDED BY PLUGGING IN 423A KTU.
3. USE 20 GAUGE STRAPPING WIRE (STRIP WIRE BEFORE TERMINATING ON CONNECTING BLOCK) FOR POWER CONNECTIONS TO AVOID SHORTS. MAKE CONNECTIONS ON 602A PANEL CONNECTING BLOCK BEFORE CONNECTING TO THE POWER SUPPLY.
4. CONNECT TO B GRD AS SHOWN.
5. REMOVE 2 OPTION IF 424A KTU IS USED.
6. REMOVE 2 OPTION IF "TOUCH-TONE" IS USED.
7. CONNECT RN LEAD TO PANEL IF INTERRUPTED SIGNAL FOR INTERCOM IS THE SAME AS PROVIDED BY 584-TYPE PANEL INTERRUPTER. IF DIFFERENT INTERRUPTED SIGNAL IS REQUIRED FOR INTERCOM, CONNECT TO FIG. 25.
* TERMINALS ON 584B (MD) PANEL
† TERMINALS ON 584C (MD) PANEL
‡ TERMINALS ON 584D PANEL.

Page 24
NOTE:

ANY SELECTED DIGIT MAY BE MADE THE INITIAL DIGIT OF THE TWO DIGIT DIAL CODE. STRAP THE R LEAD OF THE SELECTED DIGIT TO THE TD LEAD. THE DIGIT SO ASSIGNED CANNOT BE USED FOR A STATION CODE.

Fig. 24—602A Panel, 424A KTU Connection of Transfer Digit Lead
Fig. 25—602A Panel, 422B KTU, X1-X0 Station Busy Selector Circuit Connections for Adding Tens Group and Optional 421A KTU to Provide Interrupted Signaling

NOTES:
1. TERMINATE CONN CABLE TO COL F IF LEFT-HAND BLOCK OR COLUMN A IF RIGHT-HAND BLOCK. REFER TO BLOCK DIAGRAM COVERING 6684-25 CONN BLOCK.
2. SEE FIG. 9 FOR PANEL AND CONNECTING BLOCK LAYOUT.

* TO TEL SET, SEE FIG. 27 FOR CONNECTIONS

TPA 551245
Fig. 26—602A Panel, 407B KTU, Station Connections via Cross-Connections for Deluxe Dial Intercom
Fig. 27—602A Panel, 424A KTU, Station Connections via Cross-Connections for Deluxe Dial Intercom (Sheet 1)
Fig. 27—602A Panel, 424A KTU Station Connections via Cross-Connections for Deluxe Dial Intercom (Sheet 2)
Fig. 28—602A Panel, 420A KTU, Long Line Circuit, Deluxe Dial Intercom, Connections to Optional KTU in 69B Apparatus Mounting
Notes:
1. Select code and connect leads for selected code as shown in vertical column.
2. Provide separate signal key for each station code to be selected.
3. Provide separate 421A KTU for each station code to be selected.
4. See Fig. 10 for panel and connecting block layout.
5. When more than one 421A KTU is used for DSS connect B ground or the CG lead from 603A panel as follows:

   603A PANEL
   66-TYPE CONN BLK ASSOC WITH FIRST
   421A KTU
   19

   66-TYPE CONN BLK ASSOC WITH OTHER
   421A KTU
   19

   66-TYPE CONN BLK ASSOC WITH LAST
   421A KTU
   19

   602A PANEL
   ALL

   602A PANEL
   ALL

N - with "touch-tone"
2 - without "touch-tone"
6. A 400J diode (procure locally) must be connected as shown in a dial-tone equipped selector-only arrangement on 66TI connecting block. Move RH lead from terminal A8 to terminal B8. (See note 1, Fig. 23.)

Fig. 29—602A Panel, 421A KTU, Arranged for DSS, Deluxe Dial Intercom, Connections to Optional KTU Mounted in 69D Apparatus Mounting (Sheet 1)
Fig. 29—602A Panel 421A KTU, Arranged for DSS, Deluxe Dial Intercom, Connections to Optional KTU Mounted in 69D Apparatus Mounting (Sheet 2)
**SECTION 518-215-418**

**ASSIGNMENT FOR ROW AND COLUMN ON 602A PANEL**

**NOTES:**
1. TERMINATE CABLE TO COLUMN F IF LEFT-HAND BLOCK OR COLUMN A IF RIGHT-HAND BLOCK. REFER TO BLOCK DIAGRAM COVERING 6684-25 CONN BLOCK.
2. SEE FIG. 11 FOR PANEL AND CONNECTING BLOCK LAYOUT.
3. PROVIDE THE 413A KTU ONLY WHEN ACCESS TO THE PRESET CONFERENCE IS BY DIAL CODE OR BY DIAL CODE AND DSS. DO NOT PROVIDE THE 413A KTU WHEN ACCESS TO THE PRESET CONFERENCE IS LIMITED TO DSS.
4. WHEN THIS CIRCUIT IS PROVIDED, RING VOLTAGE (105V) MUST BE USED TO OPERATE THE AUDIBLE SIGNALS CONNECTED TO THE DIAL INTERCOM LINE.
5. "N" OPTION MUST BE PROVIDED ON THE 421A KTU. ON 421A KTU OPTION BLOCK, STRAP TERMINALS AS FOLLOWS: 1 TO 2, 5 TO 6, 7 TO 8.
6. THE "CA" LEAD MUST CONNECT TO THE DIODE MATRIX WHETHER OR NOT THE 413A KTU IS PROVIDED.
7. WHEN RINGERS ARE USED AS AUDIBLE SIGNALS, REMOVE RINGER CAPACITORS FROM CIRCUIT.

**Fig. 30—602A Panel, Deluxe Dial Intercom, Connections to Optional Preset Conference Circuit (421A KTU, Mounted in 69D Apparatus Mounting, 413A KTU Mounted in 69B Apparatus Mounting and a 1A1 Matrix Block) (Sheet 1)**

_page 34_
Fig. 30—602A Panel, Deluxe Dial Intercom, Connections to Optional Preset Conference Circuit (421A KTU, Mounted in 69D Apparatus Mounting, 413A KTU Mounted in 69B Apparatus Mounting and a 1A1 Matrix Block) (Sheet 2)