

DATA AUXILIARY SET 804L-TYPE

DESCRIPTION AND OPERATION

1. GENERAL

1.01 This section contains a physical and functional description of Data Auxiliary Set 804L-type. This section also includes information on the operation of the data auxiliary set. General description information on the 4A-type, 5A-type, and 6A-type Data Mountings and other related equipment has been included where necessary to provide a better understanding of the features and functions of the data auxiliary set.

1.02 Data Auxiliary Set 804L-type, shown by Fig. 1, is a control panel used in conjunction with the 4A1, 5A1, and 6A1 Data Mountings. The panel is used to provide control over a maximum of 48 switched access or private line data sets.

1.03 Data Auxiliary Set 804L-type is mounted in the center front door of a KS-20093 L1 cabinet (Fig. 1). It allows an attendant to access, make busy, and release from busy any switched data set and place private line data sets into and out of the test mode.

2. PHYSICAL DESCRIPTION

DATA AUXILIARY SET 804L-TYPE

2.01 The physical dimensions of Data Auxiliary Set 804L and the cabinet (KS-20093 L1) used for mounting the 804L are shown by Fig. 1. The data auxiliary set weighs approximately 27 pounds. The panel is provided in shadow-finish stainless steel.

2.02 The major components of the data auxiliary set are listed in Table A. The key numbers or callouts given in Table A refer to Fig. 2 which indicates component location on the 804L.

2.03 The 48 nonlocking keys grouped together, shown by Fig. 2, are referred to as the data set field of keys. The designations of these keys are given by Fig. 3.

2.04 The three 6-button keys make up the action key field, the control key field, and the telephone line key field. These key fields are shown by Fig. 2 and the key designations are given by Fig. 3.

2.05 The keys on the 804L will be referred to in this section by their field grouping and key designation. Refer to Fig. 2 and the following text for the designation of these key fields.

- The six keys shown by callout 3 make up the "telephone line" field.
- The six keys shown by callout 4 make up the "action" field.
- The six keys shown by callout 5 make up the "control" field.
- The 48 keys shown by callout 6 make up the "data set" field.

4A1 DATA MOUNTING

2.06 The 4A1 Data Mounting is a panel designed for mounting in a KS-20093 L1 cabinet. It is connected to Data Auxiliary Set 804L-type and to the 5A1 or 6A1 Data Mounting. A maximum of eight 5A1 or 6A1, or a combination of these data mountings can be controlled, i.e., interfaced to a single 4A1 Data Mounting.

2.07 For identification of the 4A1 Data Mounting, refer to Fig. 4. Table B lists the major components.

2.08 The 4A1 Data Mounting provides circuit bussing, power, lamp signaling, and interconnections to the other data mountings and the 804L. For a more detailed description of the 4A1 Data Mounting, refer to the section entitled 4A-Type Data Mounting, Identification (590-102-104).

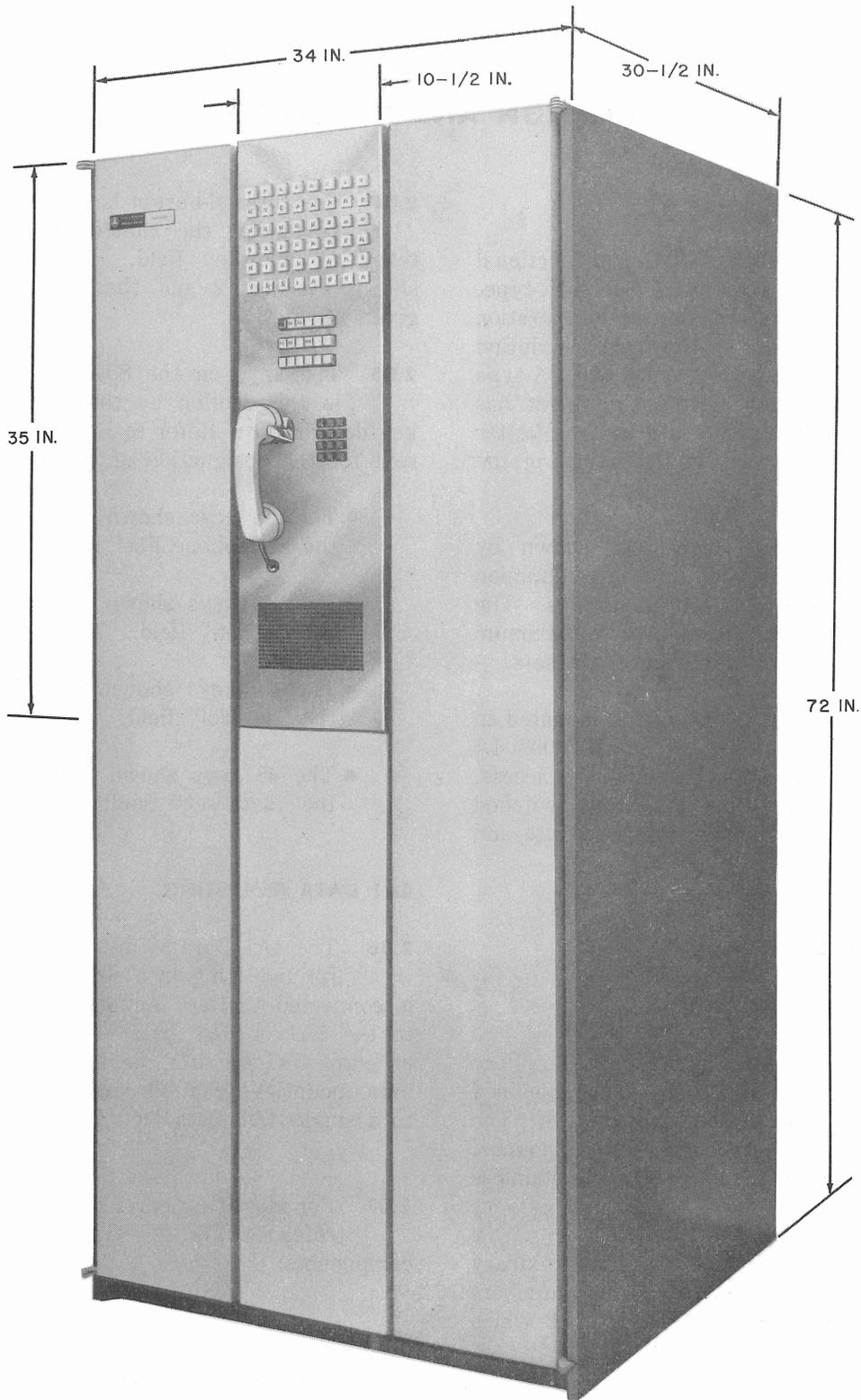


Fig. 1—Data Auxiliary Set 804L-Type Mounted in a KS-20093 Cabinet

5A1 DATA MOUNTING

2.09 The 5A1 Data Mounting is a panel designed for mounting in a KS-20093 L1 cabinet. It provides control for a maximum of six 4-wire switched data sets. The 5A1 Data Mounting provides for two AR196 circuit packs and six AR195 circuit packs. An AR195 circuit pack is required for each data set controlled by the data mounting.

2.10 The AR195 circuit pack provides line control, automatic answering, talk-to-data or data-to-talk transfer, and transfer to and from the test mode.

2.11 The AR196 circuit pack is a transfer relay unit. Each circuit pack provides for transferring three lines to either an 804L or a separate control console.

2.12 For identification of the 5A1 Data Mounting, refer to Fig. 5 which shows the major components of the data mounting. Table C lists these major components. For more detailed information on the 5A1, refer to the section entitled 5A-Type Data Mounting, Identification (590-102-105).

6A1 DATA MOUNTING

2.13 The 6A1 Data Mounting is designed for mounting in a KS-20093 L1 cabinet. This unit provides control for a maximum of six private line data sets. The data mounting also provides test mode control over these data sets.

2.14 For identification of the 6A1 Data Mounting, refer to Fig. 6 which shows the major components of the data mounting. Table D lists these major components. For more detailed information on the 6A1, refer to the section entitled 6A-Type Data Mounting, Identification (590-102-106).

EQUIPMENT ARRANGEMENT

2.15 The equipment arrangement depends almost entirely on the customer's application and the customer's facilities; therefore, it is impossible to give detailed arrangement instructions. Refer to the sections entitled Data Auxiliary Set 804L-Type, Installation and Connections (598-056-200), and Data Sets, Multiple Installation Information (590-010-201) for installation information. Fig. 7 shows a typical multiple data set equipment arrangement.

3. FUNCTIONAL DESCRIPTION

3.01 Data Auxiliary Set 804L is used in conjunction with the data mountings previously described to provide either switched and/or private line access for a multiple data set installation. The 804L controls the associated equipment by providing the required control contacts. An indication of the status or condition of the equipment is also provided. When used with a remote control console, controls and indications are provided both locally and at the remote console position.

3.02 Data Auxiliary Set 804L can control only 48 data sets; however, additional 804L's may be used as shown by Fig. 8 when it is necessary to provide more than 48 data sets. Each new 804L requires another 4A1 Data Mounting. A console will also require a 4A1 Data Mounting which is connected as shown by Fig. 8.

3.03 Data Auxiliary Set 804L, in conjunction with the 4A1 Data Mounting, is used to control 5A1 and 6A1 Data Mountings which are connected as shown by Fig. 9. A maximum of eight 5A1 or 6A1 Data Mountings or any combination of 5A1 and 6A1 Data Mountings can be controlled. Since each 5A1 or 6A1 Data Mounting provides for six data sets, a total of 48 data sets can be controlled.

3.04 Fig. 10 shows the connection of six data sets to a 5A1 or 6A1 Data Mounting. This figure also shows the jacks used for maintenance purposes, i.e., the ringdown lines.

3.05 The 48 keys of the data field (refer to Fig. 3) provide for selection of the individual data set and indicate the status of the data set.

3.06 The action field is composed of the PICK UP, MAKE BUSY, BUSY REL, and PL TEST keys. These keys make the necessary connections required to perform their designated function, or condition the associated equipment for performance of the function.

3.07 The control field, which is composed of the DATA, TALK, and TEST keys, provides the necessary contacts required for placing an accessed data set in the required operating mode.

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3.08 The telephone line field, which is composed of the ATND LINE, RING DN 1, and RING DN 2 keys, provides for telephone service on the attendant line and the two ringdown lines.

3.09 The functional descriptions of the 4A1, 5A1, and 6A1 Data Mountings are contained in the following applicable practices:

- 4A-Type Data Mounting, Identification (590-102-104)
- 5A-Type Data Mounting, Identification (590-102-105)
- 6A-Type Data Mounting, Identification (590-102-106)

3.10 Connectors J1 through J8 are provided with option boards for conditioning the 804L for private line or switched service. Each connector is associated with one of the eight vertical rows of six keys, i.e., keys 1 through 6 are controlled by J1, keys 7 through 12 by J2, etc.

3.11 Since only one connector is used to control six circuits for either private line or switched access, all six of the data sets associated with a particular connector must be arranged for the same type of service, i.e., all switched or all private line. This is accomplished by using the proper option board. Option Z is used for switched access data sets, and option Y is used for private line sets. The option boards are double-sided printed wiring boards which can be inserted into the connector in two ways. To provide option Z, the board is inserted into the connector with the words "Z OPTION" at the top or facing upward. To provide option Y, the board is inserted into the connector with the words "Y OPTION" facing upward.

4. OPERATION

4.01 Refer to Fig. 3 for the key designations and key field designations referred to in the following text.

4.02 Since the 804L may be used to control either private line and/or switched data sets, the operations performed differ depending on which type of set is provided.

Note: The lamp indications are referred to as "steady on," "wink," and "flash" conditions. These conditions are defined as follows:

- A "steady on" condition indicates that the lamp lights and remains lighted. This indicates a "talk" or "data" condition for switched access sets.
- A "wink" condition is a 2-1/2 pulse-per-second signal with an on-off ratio of 37 to 3. This indicates a "test" or "make busy" condition.
- A "flash" condition is a one pulse-per-second signal with an on-off ratio of 1 to 1. This indicates a "ringing" or "accessed" condition.

4.03 The data set field indicates the status of switched access data sets. Four indications are presented: idle, ringing, data mode, and test mode. During the idle condition, the lamp is extinguished. The ringing condition shows a flashing lamp only during ringing. The data mode is indicated by a steady on lamp, and the busy mode is indicated by a winking lamp. No status indication is provided for private line equipment in the idle or data mode.

Note: The following information contained in 4.04 through 4.06 refers to and is applicable to switched network data sets only.

4.04 A data set is accessed as follows:

- The nonlocking PICK UP key in the action field is momentarily depressed. When the PICK UP key is depressed, the lamp associated with the PICK UP key (the lamp located under the key) lights. The data set field is now conditioned for accessing.
- Momentary depression of a key in the data set field accesses the data set associated with the depressed key. The lamp associated with the PICK UP key begins to flash which indicates that a data set has been accessed.
- Depression of the PICK UP key when a data set has been accessed releases the previously accessed data set and conditions the data set field for accessing another set. This is indicated by the lamp associated with the PICK UP key changing from the flash to the steady on condition.

4.05 To place a data set in the make busy mode, perform the following operations:

- Momentarily depress the nonlocking MAKE BUSY key located in the action field. The lamp associated with the MAKE BUSY key (the lamp located under the key) will start winking which indicates that the data set field is conditioned for placing the selected data set in the make busy mode.
- Depression of one of the keys in the data set field will place the selected data set in the make busy mode. A data set in the make busy mode presents a winking indication to the lamp associated with the selected key in the data set field. Additional sets can be made busy by depressing the applicable data set field key.
- Depression of the BUSY REL key in the action field conditions the data set field to release data sets from the make busy condition. When the applicable key in the data set field is depressed, the data set is released from the make busy state and the winking lamp under the data set key is extinguished. The conditioning of the data set field for the busy release mode is indicated by the lamp associated with the BUSY REL key lighting, i.e., the lamp located under the BUSY REL key.

4.06 To place a switched data set in the talk, test, or data mode, the control field of keys is used and the operations indicated in the following text are performed.

Note: The control field is used only when the data set has been accessed.

- When a data set has been accessed as indicated in 4.04, the data set can be placed in the talk mode by depressing the TALK key and removing the handset from the switch hook.
- The data mode is initiated from the talk mode. Depression of the nonlocking DATA key transfers the set to the data mode and lights the lamp under the DATA key. The release of the DATA key also releases the TALK key.

- The test mode is also initiated from the talk mode. Momentary depression of the nonlocking TEST key transfers the data set to the test mode. When the handset is replaced on the switch hook, the test mode is not affected and the data set is released from the accessed condition.
- Depression of the TALK key and removal of the handset from the switch hook removes the data set from the data mode and places the data set in the talk mode.
- Return of the handset to the switch hook, i.e., operation of the switch hook, will dismiss the accessed data set when it is in the talk mode.

Note: The following information contained in 4.07 refers to and is applicable to private line data sets only.

4.07 Conditioning a private line data set for testing is accomplished by use of the action field PL TEST key.

- Momentarily depress the PL TEST key. This conditions the data set field to place a selected data set in the test mode. The lamp under the PL TEST key lights steadily.
- Momentarily depress the data set key to place the selected data set in the test mode. Release of the data set field key removes the test mode conditioning from the data set field. The lamp under the applicable data set field key winks and the lamp under the PL TEST key extinguishes.
- Release from the test mode is effected by depressing the data set field key for the selected data set while the data set field is not conditioned for entering the test mode. This extinguishes the winking lamp.

4.08 When required, a control console can be used in conjunction with either a single 804L or a multiple 804L installation as shown by Fig. 8. The controls provided by the console and the 804L will be identical and will perform identical functions. Since the console and 804L provide the same controls, a description of console operation is omitted.

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5. REFERENCES

5.01 For additional information on Data Auxiliary Set 804L-type and associated equipment, refer to the following list of supplementary information:

- 590-102-104 4 A-Type Data Mounting, Identification
- 590-102-105 5 A-Type Data Mounting, Identification
- 590-102-106 6 A-Type Data Mounting, Identification

590-010-201 Data Sets, Multiple Installation Information

5.02 The following schematic drawings and circuit descriptions pertain to Data Auxiliary Set 804L-type and associated equipment.

- SD- & CD-1D110-01 Data Auxiliary Set 804L-Type
- SD- & CD-1D112-01 5A-Type Data Mounting
- SD- & CD-1D113-01 4A-Type Data Mounting
- SD- & CD-1D114-01 6A-Type Data Mounting

**TABLE A
804L1 COMPONENT LIST**

KEY NUMBER	COMPONENT	DESIGNATION	NUMBER REQUIRED
1	Telephone Handset	G3K-58	1
2	Switch Hook	P85A100	1
3	Six-Button Key	635C2C	1
4	Six-Button Key	635B2	1
5	Six-Button Key	635A2C	1
6	Key	624M4	48
7	Cord Reel	3B	1
8	Connector (J9)	KS-16672 L3	1
9	Connector (P1-P8)	KS-16671 L3	8
10	Option Board (A1-A8)	P-10H382	8
11	Connector (For Holding Option Board J1-J8)	906E	8
12	Ringer	C4A	1
13	Buzzer	KS-8109 L2	1
14	Telephone Network	4010D	1
15	TOUCH-TONE® Dial	35A3A	1

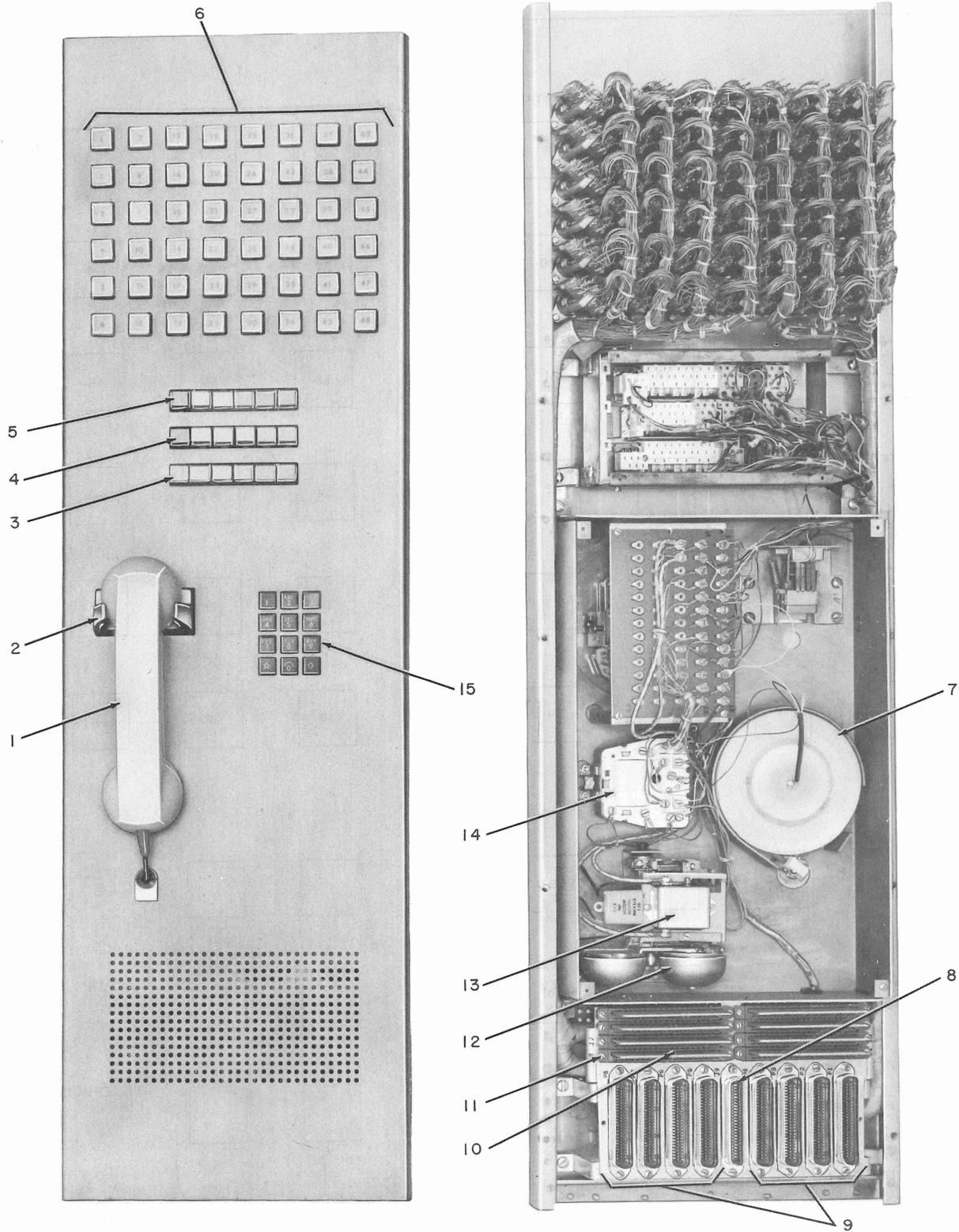


Fig. 2—Data Auxiliary Set 804L-Type, Front and Rear Views Showing Component Placement

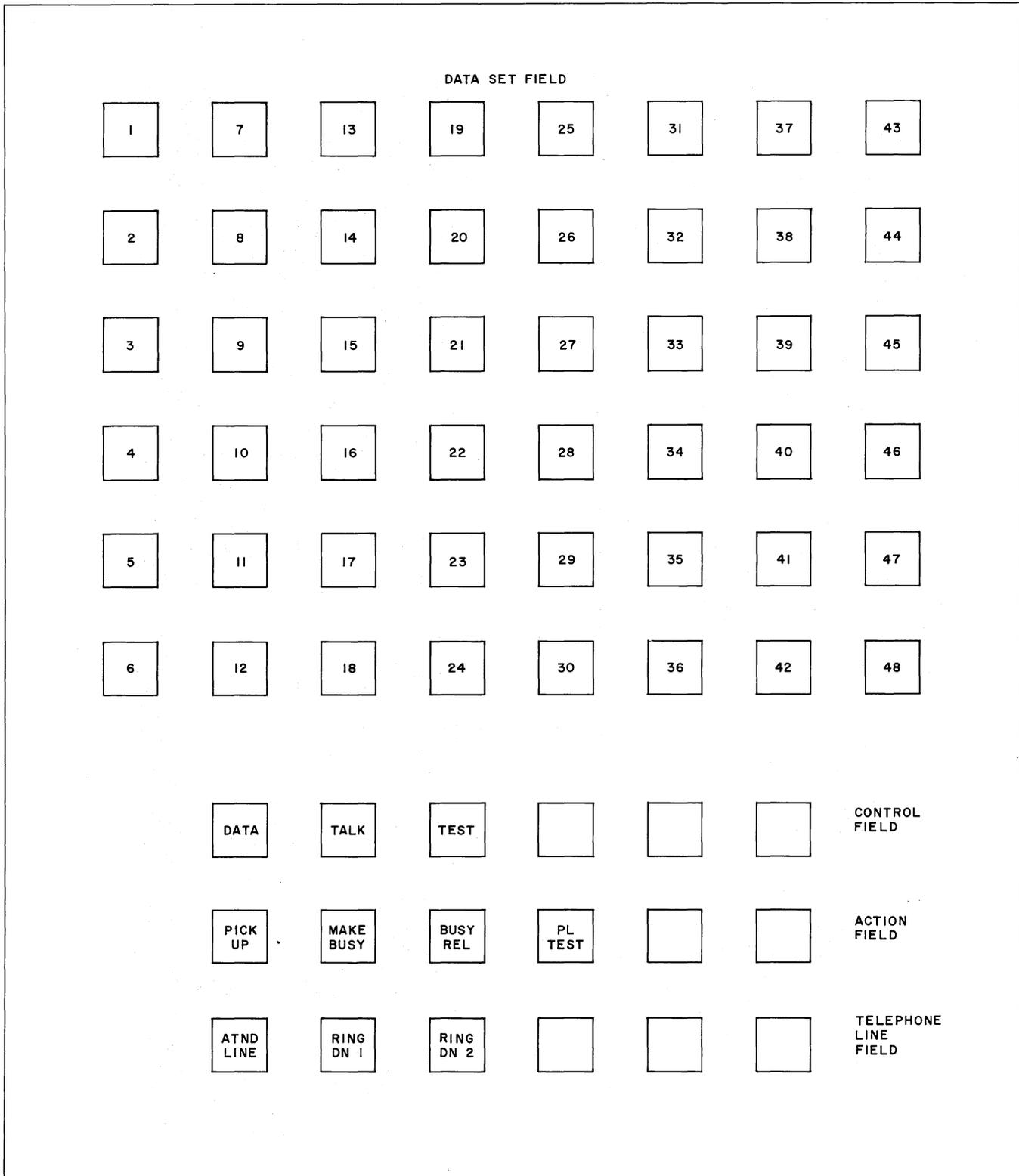


Fig. 3—Key Designations

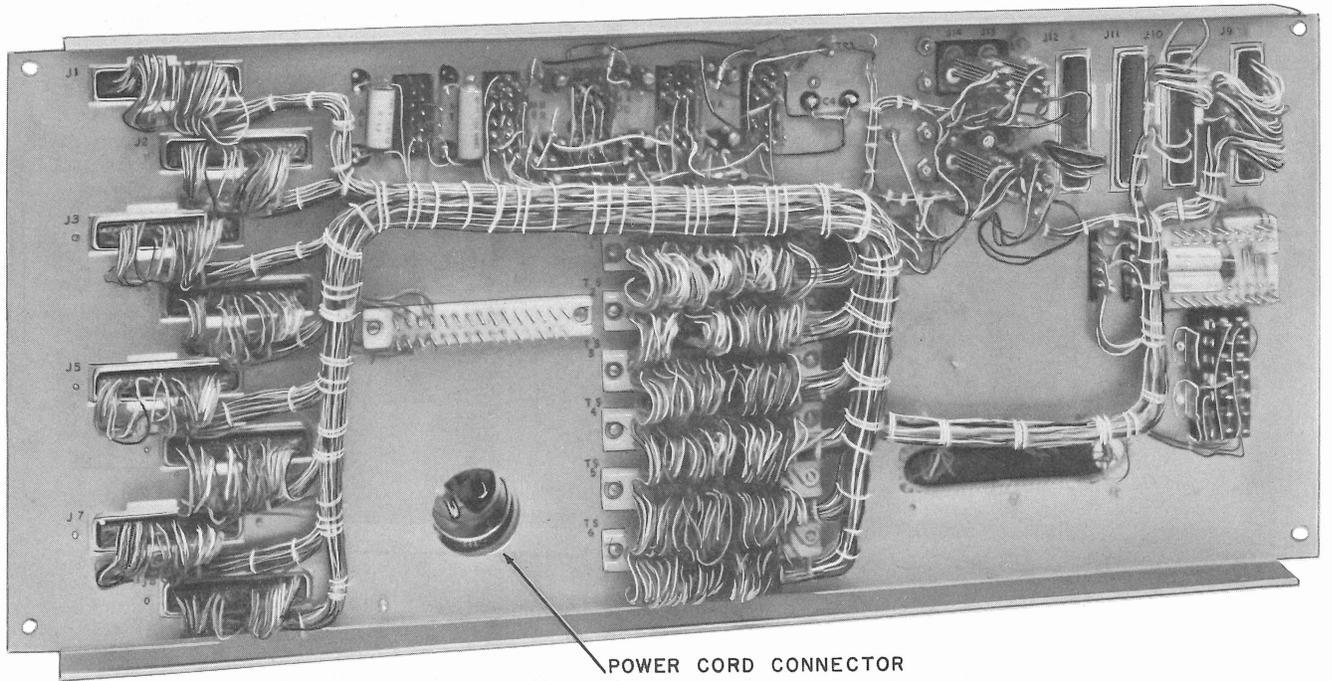
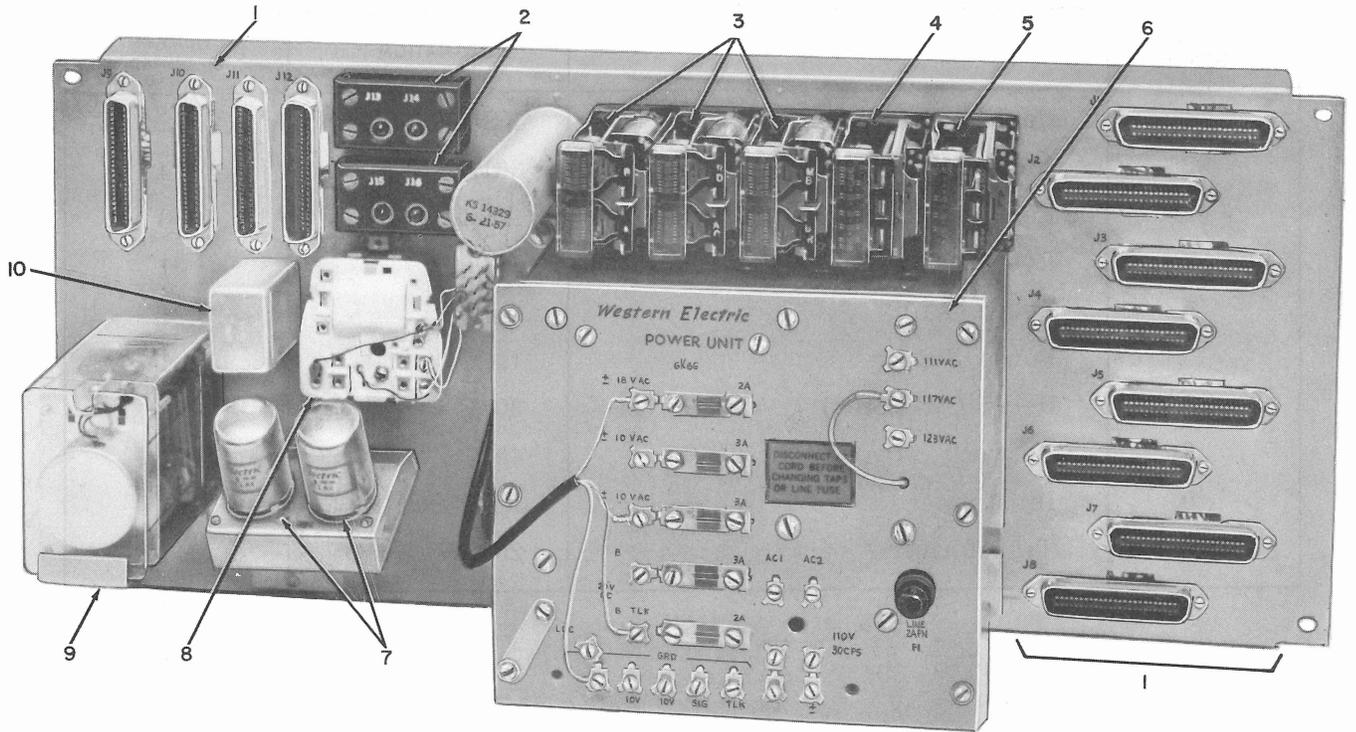


Fig. 4—4A1 Data Mounting, Front and Rear Views

TABLE B
4A1 COMPONENT LIST

KEY NUMBER	COMPONENT	DESIGNATION	NUMBER REQUIRED
1	Connector (J1-J12)	KS-16786 L4	12
2	Jack (J13-J16)	361C	4
3	Relay (A, B, AC, RD, BR, MB)	AK22	3
4	Relay (AT)	AG34	1
5	Relay (AL)	AJ100	1
6	Power Supply	19C2	1
7	Relay (BC, BSH)	303E	2
8	Network	4010B	1
9	Interrupter	KS-15900 L1	1
10	Transformer	2563W	1

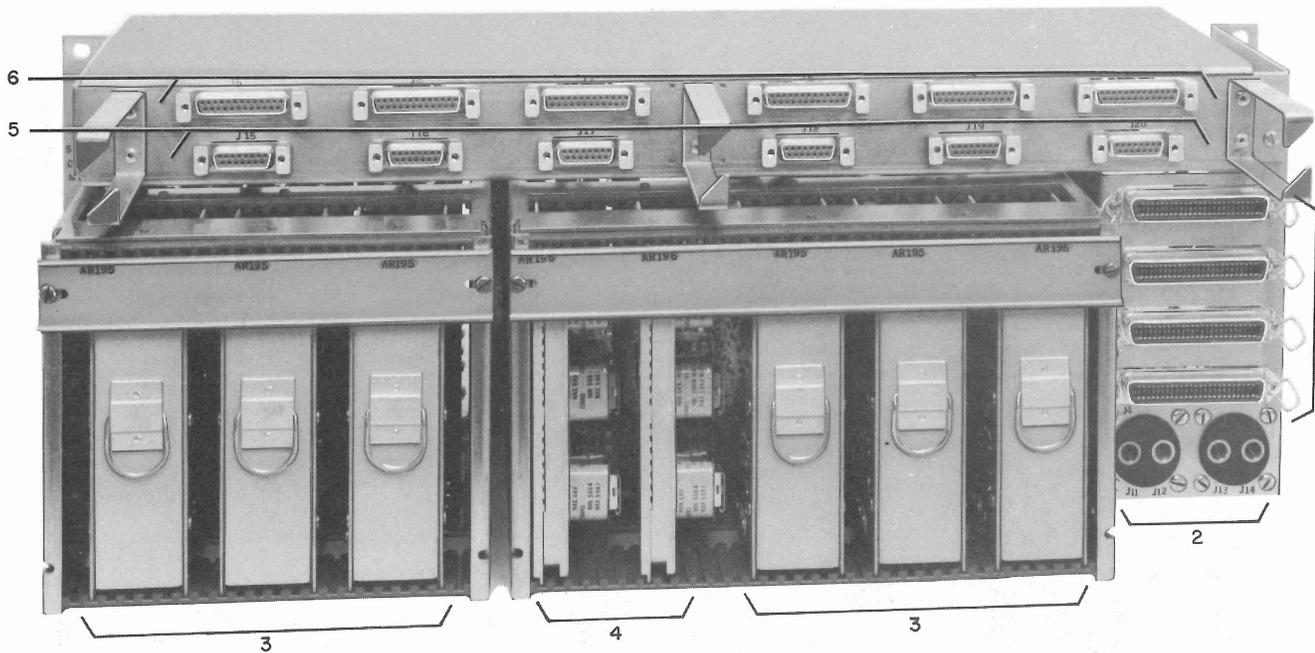


Fig. 5—5A1 Data Mounting Equipped With AR195 and AR196 Circuit Packs

TABLE C
5A1 COMPONENT LIST

KEY NUMBER	COMPONENT	DESIGNATION	NUMBER REQUIRED
1	Connector (J1-J4)	KS-16786 L4	4
2	Jack (J11-J14)	361C	4
3	Circuit Pack	AR195	6
4	Circuit Pack	AR196	2
5	Connector (J15-J20)	KS-19087 L1	5
6	Connector (J5-J10)	KS-19087 L2	5

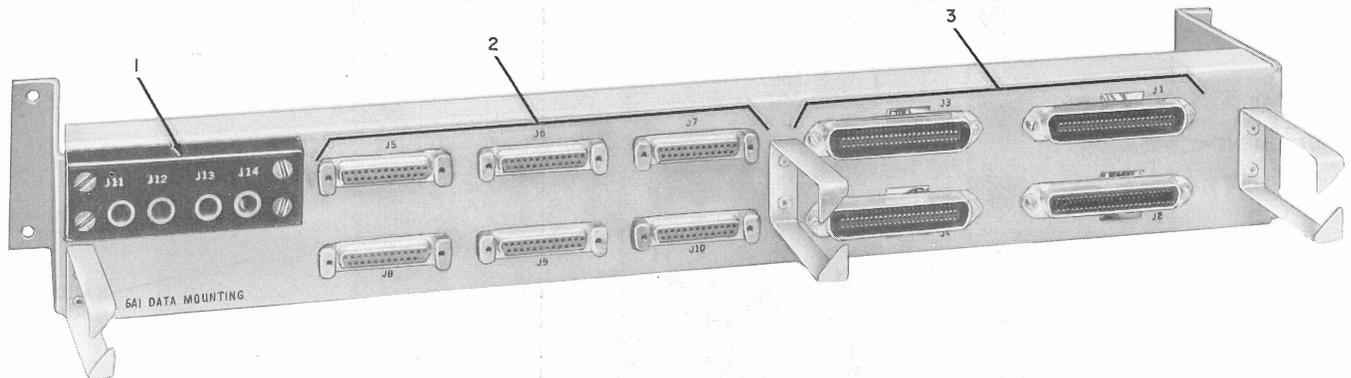


Fig. 6—6A1 Data Mounting, Front View

TABLE D
6A1 COMPONENT LIST

KEY NUMBER	COMPONENT	DESIGNATION	NUMBER REQUIRED
1	Jack (J11-J14)	361C	4
2	Connector (J5-J10)	KS-19087 L2	5
3	Connector (J1-J4)	KS-16786 L4	4

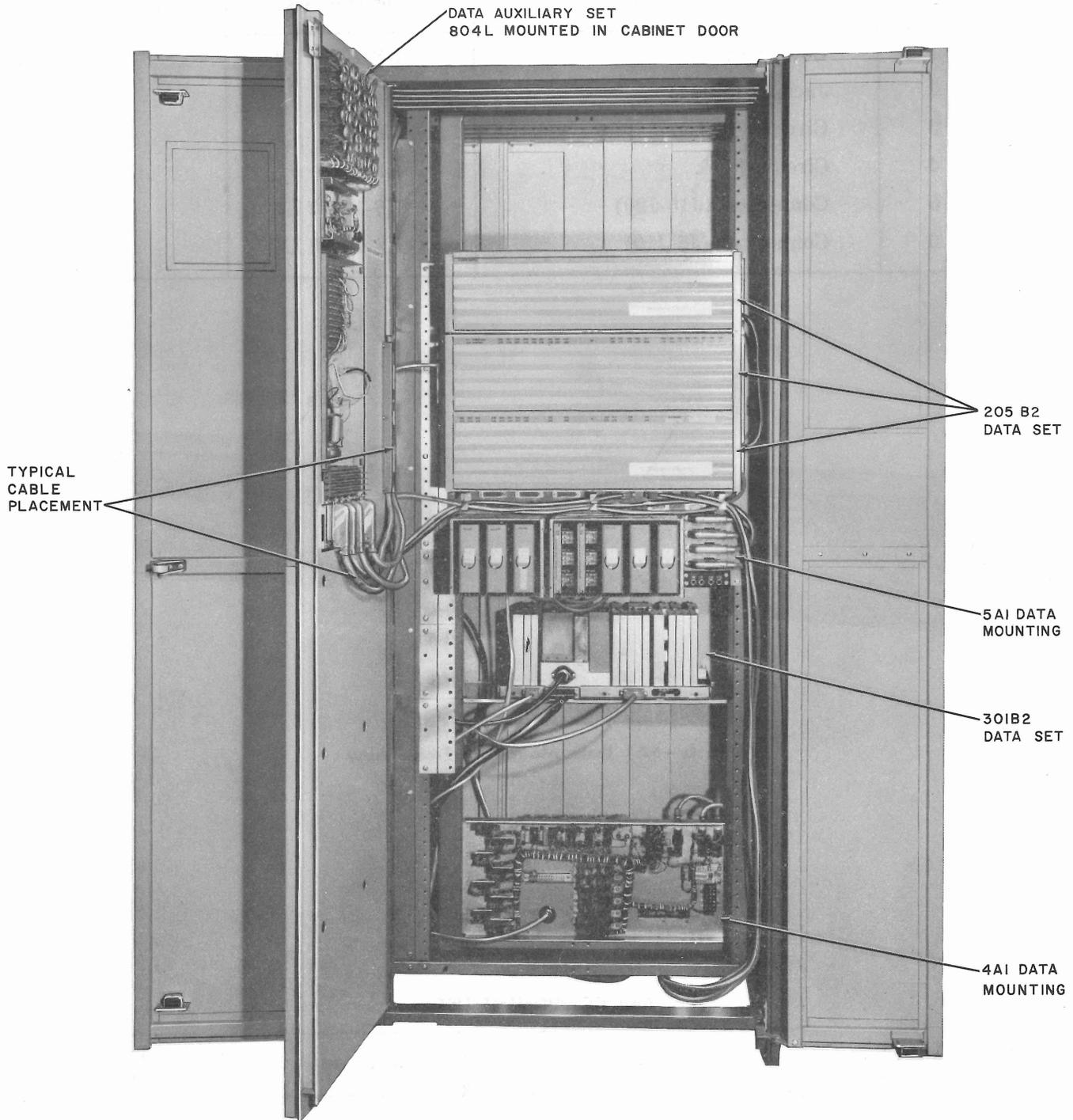


Fig. 7—Typical Multiple Data Set Installation in a KS-20093 Cabinet, Equipment Arrangement

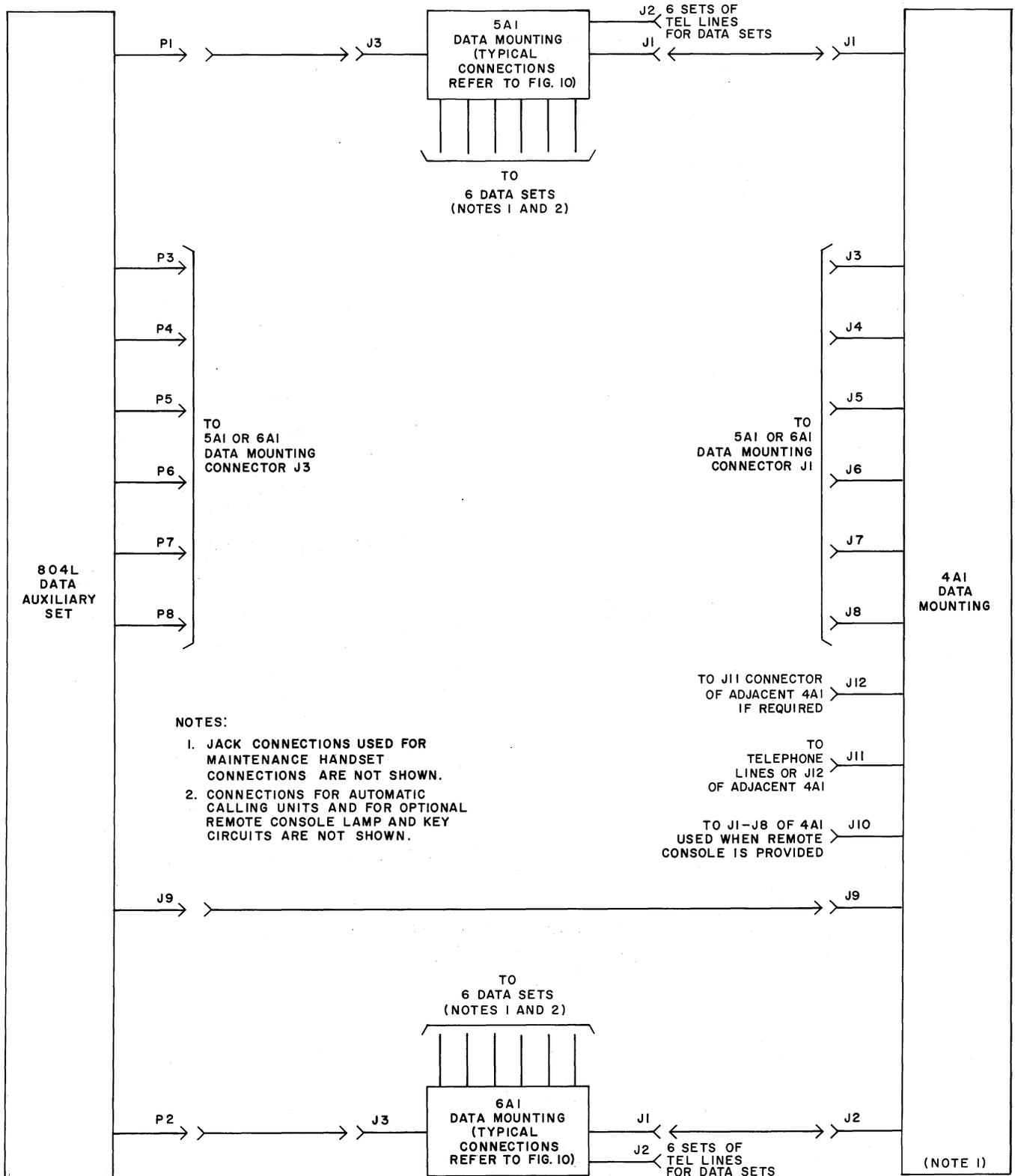


Fig. 9—Multiplying of 5A1 and/or 6A1 Data Mountings by a Data Auxiliary Set 804L and a 4A1 Data Mounting, Block Diagram

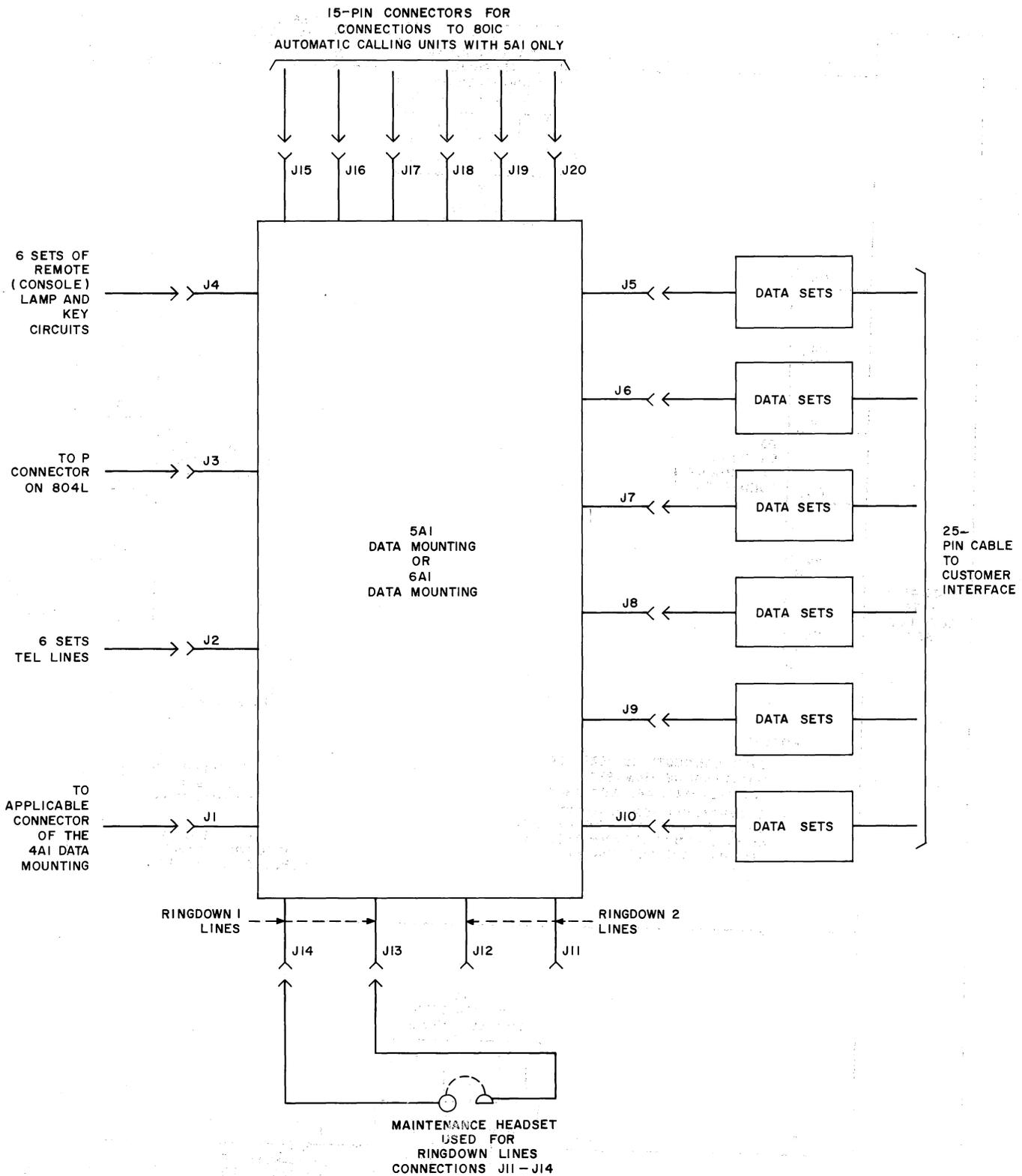


Fig. 10—Multiplying of Data Sets Using a 5A1 or 6A1 Data Mounting, Block Diagram